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THE RELATION OF RODENT PLAGUE TO HUMAN INFECTION *

W C. RUCKER MD, MS GrPH
Assistant Surgeon General United States Public Health Service
WASHINGTON, D C.

The most essential factor in the control of plague during recent years has been the realization that it is essentially a rodent epizootic It is true that the literature of plague contains reports of the disease in monkeys, dogs, cats, horses, asses, cattle, sheep, goats, swine, calves, chickens, pigeons, geese, camels, kangaroos, bats, frogs, geckoes, goldfish and carp, but many of these reports are not confirmed by convincing experimental evidence

Hankin[1] noted an epizootic in monkeys in October, 1897, at Kankhal, and a second simian epizootic was observed at a little later date at Jawallapur A third series of cases was observed at Gadar in the residency of Bombay in December, 1899 In the second and third simian epizootics the diagnosis was confirmed bacteriologically Calmette and Salimbeni[2] and the German and Russian plague commissions demonstrated the susceptibility of the brown monkey and the gray monkey to plague From the collected evidence it may be deduced that while monkeys have a great susceptibility to plague infection, they do not seem to play an important rôle in its propagation under natural conditions

While there are a number of reports on the susceptibility of the dog to plague infection, a study of them does not warrant the belief that the dog is liable to the disease

There are a large number of reports on epizootic plague among cats, yet these animals probably play a very unimportant part in the continuance and spread of the disease Hunter[3] concludes that cats are susceptible to plague and that they suffer from an acute or chronic plague septicemia He was of the opinion that they infected themselves by eating infected rats

Horses are moderately susceptible to plague infection when pure cultures are injected into their blood streams in relatively large doses A careful review of the literature does not disclose an instance in which they suffered from the disease in nature

Schreyer,[4] K Matsuo,[5] and Wu Lieu Teh[6] have reported that coolies working in a coal mine and attacked by pneumonic plague infected donkeys with the disease These are very extraordinary conditions and may be accounted as practically negligible in the course of an ordinary epidemic

Under natural conditions plague has never been found in bovines It is true that Simson[7] reported ingestion plague among calves, chickens, pigeons, dogs, geese, sheep and swine, but Bannerman and Kapadia,[8] the German commission,[9] and Hafkin and Lowson[10] have reversed his reports It is, therefore, logical to conclude that these animals do not play a role in plague perpetuation or dissemination

Since 1899, when Dchurkowski[11] described an infectious disease of camels closely resembling plague, there have been several reports of alleged outbreaks of plague in which the camel was the vehicle The Astrakan commission decided that the camel was susceptible to plague and suggested that these animals might have been the means by which plague has been introduced into countries along the caravan routes It is doubtful, however, if camels play any great part in the large problem of plague

The report of the Board of Health of Sydney, 1902, contains a note by Thompson in which he states that in the epidemic of that year seven kangaroos died from plague in the zoological garden at Sydney This is an isolated instance and without bearing on the general problem

With regard to bats, the reports are at variance Gosio,[12] experimenting with the *Vesperugo noctula*, believed that he was able to infect them On the contrary, Toyama[13] reported these animals as insusceptible

It seems to be fairly clearly demonstrated that birds in general, and particularly birds which run on the ground, are not susceptible to plague

The cold-blooded vertebrates, that is, reptiles and batrachians, have been experimented with by Nuttal,[14] Dweill,[15] Furth,[16] and Fukahara,[17] and do not seem susceptible to plague, either by injection or ingestion

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* Read before the Section on Preventive Medicine and Public Health at the Sixty Sixth Annual Session of the American Medical Association San Francisco June 1915

[1] Hankin 30 Ann Rep Sanitary Delegate of the United Provinces 1897

[2] Calmette and Salimbeni Plague at Oporto Ann d l Inst Pasteur 1899 xiii 865

[3] Hunter W J Plague in Cats Lancet, London April 22 1905 p 1064

[4] Schreyer, O Oester Sanitatswesen 1911, No. 19

[5] K. Matsuo The Simultaneous Appearance of Plague in Man and the Ass on the Same Farm Centralbl. f Bakteriol Orig, 1912, lxv 417

[6] Wu Lieu Teh International Plague Conference of Mukden Lancet London May 20 1911

[7] Simson W J Plague at Hongkong Brit. Med Jour, March 28 1903

[8] Bannerman and Kapadia The Receptivity of Domestic Animals to Plague Jour Hyg 1908, No 2

[9] Report of the German Commission on Plague in India 1899 Arb. a d k Gsndhtsamte xvi

[10] Lowson Trans. Soc. Epidem, N S, 1897, xvii, 57

[11] Dchurkowski Arch d Veterinarwissensch April, 1899

[12] Gosio B The Transmissibility of Plague to Rats, Arch Ital Biol., 1903 xxxix No 1 *Bull d l Inst. Pasteur 1903*, p *784*

[13] Toyama Experimental Studies on Plague Ztschr f med *Mikros. 1909*

[14] Nuttal Centralbl. f Bakteriol, 1897 xxii, 87

[15] Dweill Centralbl f Bakteriol. 1897 xxii 382

[16] Furth Ztschr f Hyg u. Infektionskr, 1907 No *2* p. 315

[17] Fukahara Arch f Hyg 1907 lxiii Part

Mention need not be made of the rôle of insects and *Ixodidae* in relation to plague, their part being the transmission of the infection from host to host rather than the function of keeping the disease alive within their own bodies

The rôle of the rat in the pathogenesis of plague is classical and there is a preponderance of evidence which proves that bubonic plague in man depends entirely on the presence of the disease in rodents. It is true that in the pneumonic form of the disease infection occurs directly from man to man without the intermediation of any ectoparasite, but the great bulk of plague is not pneumonic, but bubonic, and it is the rodent species which keeps the disease alive and which carries it from country to country and into the home of man Plague has been found in nature in the *Mus norvegicus,* the *Mus rattus,* the *Mus alexandrinus,* and the *Mus musculus* The *Nesocia bandicota,* or bandicot rat, the *Arctomys bobac,* or tarbagan, the *Putorius furo,* or ferret, the *Herpestes griseus,* or mongoose, and the *Neotoma fuscipes,* or brush rat, have all been found susceptible to the disease All of the spermophiles have proved infectible, as have also the *Cynomys ludoviciana,* or prairie dog, and the *Putorius foetidus,* or skunk The *Citellus grammurus,* or rock squirrel, and the *Citellus beecheyi,* or ground squirrel, have also proved infectible The disease has been found in nature in brush rats, skunks and ground squirrels The overwhelming fact in plague perpetuation and spread is that it is a rodent disease

It is interesting to study the distribution of human plague cases in their relation to rodent plague cases It is, of course, impossible to discover every case of rodent plague and on account of the migratory habits of rats it does not necessarily follow that the infection exists in large amounts at every place in which plague rats are taken On the other hand, the impossibility of determining accurately the movements of human beings renders it difficult at times to discover the exact place at which infection was received Not infrequently, however, plague rats are found in or near the building in which the human plague victim worked or lived, and the reverse is even more true, that human plague does not occur among people who work and live in rodent-free surroundings Of the thirty cases of human plague which occurred in New Orleans in 1914, only five were unconnected with rodent plague foci, and in many of them the place at which the infection was received was accurately determined

The foregoing is the basis of the measures for plague prevention and eradication Since plague is a rodent disease, if man is isolated from rodents he will not under ordinary circumstances contract the disease, the key to prevention being the separation of man from rats

It is manifestly impossible to kill all of the rats in a given community, much less in a whole country, or the entire world If their migrations can be controlled, if they can be excluded from the places in which man lives and works, the maximum result has been accomplished Wide migration of rats occurs largely by ships, a relatively very small number traveling overland by trains The frequent periodic fumigation of ships, the breasting-off and rat-guarding of nonfumigated vessels, and the inspection of outgoing and incoming cargoes will, to a considerable degree, control wide rodent migration The ratproofing of buildings used by man for any purpose whatsoever will keep rodents out of intimate association with man For this purpose impervious material, such as concrete, brick, stone, and tile, have their architectural application During the presence of a plague epizootic the extermination of rats by traps, poisons, and separation from food supply so diminishes the density of the rodent population as to limit the spread of the disease from the sick to the well, and thus the disease automatically dies out for want of infectible material This in effect is the dilution of the infectible material At the same time the laboratory examination of captured rodents affords an accurate guide as to the centers of rodent infection and permits the application of intensive preventive methods so that the disease may be stamped out among rats before opportunity has occurred for it to be transmitted to man

In the presence of an epidemic, every measure which will protect man should be taken Among these is immunization against the disease after the method of Haffkine This is of doubtful applicability in American cities It could never be made mandatory, and those persons who volunteer for such inoculations do not form the class which is most liable to receive the infection This method has not proved useful in large eradicative measures, it having been found more practicable to limit the operations to rodent extermination and the exclusion of this species from the home of man

ABSTRACT OF DISCUSSION

Dr William C Hassler, San Francisco The paper gives us a very clear insight into the animals which are carriers of this disease The point that I was particularly interested in was the matter of prophylaxis I was the first one to receive a dose of Haffkine serum here in 1900 I was then acting chief sanitary inspector of the health department We tried to impress its harmlessness on the Chinese population here whom we then had in quarantine It was all right as long as they saw us getting the dose, but a few days later when we came to demonstrate the harmlessness of it, and our arms were swollen about the bigness of a goose egg, we had great difficulty in inducing them to submit to the measure It would not work and we had to adopt other measures Nevertheless, it is a safeguard, and one which can be used and has its value under certain conditions

Dr W C Rucker, Washington, D C It may be of interest to this section to learn a little bit about the results of the campaign against plague in New Orleans New Orleans is today 75 per cent rat-proof The probabilities are that there will be 15 per cent of the city which cannot be rat-proof for several years There therefore remains only 10 per cent to be done This is being accomplished Up to the present we have captured in the traps alone over 375,000 rodents They are being taken at the rate of about 1,100 per day Of these, 247 have been found infected, the last one having occurred on June 11 We are now getting plague rats at the rate of one out of over 21,000 They uniformly come from buildings and premises which are not rat-proof There were thirty human cases, of which nine patients died The probabilities are that had it been possible to give all of those patients the serum treatment very early and in large doses, the mortality would have been very much lower The epidemic began in the early part of June, and the last human case occurred Oct 4, 1914 An extensive out-going quarantine was established in order that the port might be kept open Vessels were fumigated with either sulphur or carbon monoxid or hydrocyanic gas in order that they might leave freely Every package of freight was inspected before it was put on the ship Every freight car that left the city was inspected to determine its rat-proof and free condition, all freight was inspected before being loaded, and was then loaded under the eye of an inspector

The car was then sealed with a lead seal bearing some device, and there was a large sign posted on the side of the car, This car certified as to its rat-proof and free condition pro viding the seal remains unbroken" As a result, freight both by maritime and overland routes moved freely and continuously to and from the city of New Orleans In this work we rat-proofed some 30,000 cars alone, and in the fumigation of ships we consumed for the carbon monoxid fumigation about a million and a half pounds of coke. There was established early an inspection of the dead in order that all cases might be found, and this inspection continued until it was very clearly demonstrated that no more human plague existed All of the rats were identified as to sex and species, and in this connection I desire to point out a very interesting gage on the value of your work. If you are carrying on a rodent extermination campaign, it is interesting to have a check by means of which you may know whether you are really killing rats The trapping of mice in a campaign is entirely incidental You do not aim to catch mice, and in the beginning of the campaign it will be found that the number of the true rats will be very high, something like 91 per cent of the entire catch If you will plot those on a chart you will find, if your work is successful, that there is a steady fall in the number of true rats, and that there is a steady rise in the number of mice, until you come to a point, as we did away along last December, where the mouse line has passed and far exceeds the rat line In other words, you have been killing off, if your work is successful, the natural enemies of the mouse, and the mouse is therefore able to come out and get into your traps We have in our exhibit at the exposition a very good chart showing this very simple point

My paper, I feel has been trite, but I think that it is a wise thing to tell the story over and over again that so long as you have rats you are liable to have rodent infection, and that so long as you have rodent infection you are liable to have human infection and plague

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URINARY ANTISEPSIS

A CLINICAL AND BACTERIOLOGIC STUDY *

FRANK HINMAN, M.D

SAN FRANCISCO

Urinary infection is the most frequent of genito-urinary disturbances Sometimes it is the primary and principal disease, but more often it occurs as an added and secondary burden, and whatever the abnormality it is always an imminent possibility The significance of the condition is given unusual emphasis by a recent analysis of the postmortem records of the Johns Hopkins Hospital (1912-1914) These records show that the cause of death, in more than half of the fatalities in the urologic service, was an infection which, as indicated clinically in the histories and pathologically by finding cystitis, pyelonephritis or pyelitis, probably spread in every instance from the urinary tract These and other facts emphasize the great danger of urinary infection, and the necessity for the development of a more efficient therapeusis The object of this paper is to present a study of the limitations of the known urinary antiseptics, to correlate these facts with clinical conditions and to advocate a selective method of treatment No specific treatment or method of treatment is known An intelligent correlation, in each individual case, of antiseptic, bacteriologic and clinical facts offers a scientific and rational method of attack

CLINICAL CONSIDERATIONS

From a clinical standpoint each case of urinary infection should be studied with regard to three causative factors (1) the infecting agent, (2) the source and portal of entry of this infection and its character and degree of extension, and (3) the abnormal conditions of the genito-urinary tract which may be accessory to the prolongation or spread of the infection

Bacteriology A long list of organisms has been reported for urinary infections, but it is full of duplications under different names Relatively few organisms are common invaders, and the relative frequency of their occurrence in different parts of the tract is fairly uniform (urethritis excluded) The colon bacillus is found in from 70 to 80 per cent of renal infections *Staphylococcus pyogenes albus* (rarely the *aureus* and *citreus*) is the next most common invader, being present in about 10 per cent of the cases Then come the *Streptococcus pyogenes* and the *Proteus vulgaris* in about equal frequency, followed by scattered reports of the gonococcus and typhoid bacillus Other organisms appear in reports for a few cases only, and some of these are questionable The findings for the bladder are not so uniform and a much greater variety of organisms has been reported The colon bacillus occurs more often than all other organisms together, being isolated in from 50 to 60 per cent of vesical infections Excluding it and tubercle bacilli, the staphylococcus more than equals in frequency the occurrence of all other forms, of which the streptococcus and *Proteus vulgaris* occur most and about equally often Then follow in relatively few cases the gonococcus, pneumococcus, *Micrococcus catarrhalis* and bacilli of the *faecalis alcaligines, enteritidis, pyocyaneus, typhosus* and still rarer aerobic and anaerobic forms The relative frequency of occurrence of the tubercle bacillus is a matter of dispute but, probably, it is present in about 5 per cent of all cases These facts indicate that five organisms cover over 90 per cent of urinary infections These five are *Bacillus coli communis,* the staphylococcus, the streptococcus, *Proteus vulgaris* and the tubercle bacillus

The Source and Extent of the Infection The determination of the portal of entry of many infections is more a matter of conjecture than certainty, nevertheless, knowing the infecting agent and the extent of its activity, a very close deduction as to its source can be made The great preponderance of colon infections emphasizes the importance of intestinal conditions A colon cystitis of urethral origin is common in women, but in men who have retention or other local conditions which reduce the bladder resistance, a lymphatic borne cystitis is more common In the absence of pronounced accessory factors or instrumental causes the urethral route is rarely followed by either colon bacilli or streptococci *Proteus vulgaris* infections, however, are ascending in practically every instance and are prone to attack the bladder in old prostatics Hematogenous infections of the kidney due to streptococci often follow scarlet fever, tonsillitis, furunculosis, etc Staphylococci, being saprophytic inhabitants of the healthy urethra in 50 per cent of men, have a common urethral entry In view of the work of Rosenow and Warden relative, respectively, to streptococci and staphylococci, postgonorrheal prostatitis and seminal vesiculitis stand out as fertile sources of urinary infection from these organisms

Accessory Factors to an Infection The abnormal conditions of the urinary tract which may incite or

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[*] On account of lack of space this paper has been abbreviated for THE JOURNAL. It will appear in full in the Transactions of the Section and in the author's reprints

extend infection are well known. The difficulty comes in their recognition Their correction causes the majority of infections to quickly subside Obstruction in any part of the tract to a free urinary outflow is one of the most important of these accessory conditions Other common abnormalties are the presence of foreign bodies, such as stone or tumor, and of diverticula Injury to any part of the tract is frequently an inciting cause — injury from exposure, from the use of irritating drugs or following instrumentation, and possibly, in some cases, a reduction of resistance occurring with the continued presence of an alkaline reaction of the urine, either metabolic or from urea decomposition

It often happens that an elimination of the source of infection and a correction of certain of the above abnormal conditions of the tract which are accessory to it will effect a cure of urinary infection without the use of antiseptics Nevertheless, everyone has experienced clinical inability in these cases and it is needless to enumerate the many conditions in which antiseptics would be of value in addition to their great field of usefulness in prophylaxis The above brief outline of clinical facts, however, emphasizes the great importance of never relying on antiseptics alone in the treatment of urinary infection

TABLE 1—GERMICIDAL POWER OF DISINFECTANTS

	Per Cent 100 90 80 70 60 50 40 30 20 10	1: 20 30 40 50 60 70 80 90 100	1: 200 300 400 500 600 700 800 900 1 000	1: 2 000 3 000 4 000 5 000 6 000 7 000 8 000 9 000 10 000 11 000 12 000 13 000 14 000 15 000
Mercuric chlorid				3 2 1
Mercury oxycyanid				32 1
Potassium mercuric iodid				1 2 3
Iodin water				ae
Bromin water				be ae
Iodin and potassium iodid				2 3 1 a bce
Potassium permanganate				bc 2 3 1
Quinone				1 5
Silver nitrate			1 2 3	a b
Pyxol			1 2 3	
Lysol			b c	
Formaldehyd			1 2 3	
Hydroquinone			a b c	
Sulphuric acid			e b c	
Hydrochloric acid		bc		
Creolin			abc	
Iodin tetrachlorid		bc		
Carbolic acid		123 ab		
Calcium chlorid		b e		
Turpentine		a b c		
Oxalic acid		b c e		
Menthol		e		
Thymol		c c		
Albargin		c b d		
Protargol	32	d 1		
Green soap		a b c		
Hydrogen peroxid	1 2 3			
Argyrol	3 2 1			
Chinosol		1 2 3		
Salicylic acid	c e			
Benzoic acid	a b			
Oil of sandalwood	1 2 3			
Lugol's solution	1 2			
Sozoiodol	12 abc			
Ethyl alcohol	a b c e			
Glycerin	b e			
Boric acid		?		

FACTS REGARDING DISINFECTION

The disinfectant action of drugs, without entering into a discussion of theoretic details, is comprised under four general properties (1) germicidal action, (2) bacteriostatic or antiseptic action, (3) biochemical reaction and penetrating power, and (4) toxicity By germicidal action is meant the power of causing complete death of the organism By bacteriostatic or antiseptic action is meant the power of inhibiting the growth of bacteria for the limit of time of exposure Biochemical reaction refers to the stability or instability of some substances under different chemical influences, and their power of osmosis indicates penetrating action By toxicity is understood both the general poisonous property and the local irritant action of disinfectants The ideal drug, obviously, would have high germicidal and penetrating power with stable and nontoxic action Unfortunately, no substance exhibits these properties effectually, and clinicians have come to use the better bacteriostatic substances almost to the exclusion of the pure germicides, except on the unbroken skin The difference of opinion regarding the action of many disinfectants arises from the great difference in the methods of study, no standard of which has been satisfactorily established Most investigators have been interested from a sanitarian standpoint, many for hand disinfection The majority attempt comparison with phenol by establishing an "antiseptic phenol coefficient" which indicates germicidal power only, and for practical purposes has a very limited value Few will advocate the use of even well recognized disinfectants in such concentration as to give germicidal action in the limited time of exposure for purposes of urinary disinfection Tables 1, 2, 3 and 4 will indicate the findings of personal laboratory tests, as well as those of others whose methods correspond

Table 1, the germicidal power of disinfectants, indicates the highest dilution of the disinfectant in broth which will completely kill the organism in from fifteen to twenty minutes at 20 C (68 F), by the hygienic laboratory phenol-coefficient method

The personal findings were 1, *Bacillus coli communis*, 2, *Streptococcus pyogenes aureus*, 3, *Staphylococcus pyogenes albus*, 4, *Bacillus typhosus* (Hopkins)

The findings as reported by others are *a*, *Bacillus coli communis*, *b*, *Streptococcus pyogenes aureus*, *c*, *Staphylococcus pyogenes albus*, *d*, *Gonococcus*, *e*, *Bacillus typhosus*

Table 2, the bacteriostatic power of disinfectants, indicates the highest dilution of the substance in broth which causes absence of growth in it forty-eight hours after inoculation, at 37 C (98 6 F), the inoculation of the broth dilutions being done with 5 drops of fresh twenty-four hour bouillon cultures of the organisms

The personal findings were 1, *Bacillus coli communis*, 2, *Streptococcus pyogenes albus*, 3, *Staphylococcus pyogenes albus*, 4, *Bacillus typhosus* (Hopkins)

Table 3, the stability of disinfectants, indicates the highest dilution of the disinfectant (in water, broth and serum) which inhibits the growth of the organism (*B typhosus*) for forty-eight hours after inoculation at 37 C

The pentrating power, after Harris' collodion sac method, and the toxicity of disinfectants were studied The results regarding the previously mentioned four general properties of disinfectant action may be briefly summarized

Table 4, the penetrating power of disinfectants, indicates the power of osmosis through thin collodion sacs (Harris' method) These sacs, containing fresh twenty-four hour bouillon cultures of *B typhosus*, were immersed in broth dilution of the disinfectant and subcultures were made from these sacs to broth tubes every ten twenty and thirty minutes and at the end of twenty-four hours

contact with body fluids as to nullify their great germicidal power or to preclude their use in germicidal strength The majority of them also have weak penetrating power Iodin, potassium permanganate, silver nitrate and formaldehyd fulfil more nearly the four requirements, but it is more than likely that the great practical value of these substances is due to the fact that they all possess relatively high bacteriostatic action, for they are seldom if ever used in the strength of dilution necessary to give germicidal action in the length of time of exposure Many of the weaker germicides (alcohol, protargol, etc), because of such qualities as relative nontoxicity, good osmosis and stability, are often quite as valuable in practice Substances with great inhibitory power but little germicidal action, such as oxyquinolin sulphate and some of the dye stuffs, have very little value for external treatments, the time of exposure being necessarily too short to give much benefit

FACTS REGARDING INTERNAL URINARY ANTISEPSIS

The method of giving substances by mouth which will be largely excreted by the kidneys and then act as urinary disinfectants has wonderful possibilities in theory but is very imperfectly developed in practice Substances so used must meet many limitations They must be relatively nontoxic and nonirritating, of stable chemical composition, largely excreted by the kidneys, and of such powerful inhibitory effect as to act in weak dilution Germicidal action is not necessary, as the ideal drug will keep the urine constantly antiseptic None of the substances in use for this purpose meet these requirements The approach of certain of the anilin dyes in many ways to the ideal insures persistent search with promise of ultimate success in the discovery of efficient internal urinary antiseptics The value of the substances in common use for this purpose may be briefly summarized

TABLE 2—THE BACTERIOSTATIC POWER OF DISINFECTANTS

	Percentage Dilution of Substance in Broth																														
	1 10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	1 000	2 000	4 000	6 000	8,000	10 000	20 000	30 000	40 000	50 000	60 000	70 000	80 000
Mercuric chlorid																															1 2 3
Potassium mercuric iodid																														1 2 3	
Chinosol																												1 2 3			
Formaldehyd																											1 2 3				
Potassium permanganate																								1		3					
Silver nitrate																										1 2					
Iodin and potassium iodid																							1								
Aluminum acetate																					a b										
Copper sulphate																			b e												
Carbolic acid																		1 2 3 5													
Boric acid								1 2																							

Toxicity of Disinfectants Worth Hale has proposed a method for the determination of a "toxicity coefficient," on very much the same principle as the "antiseptic phenol coefficient " Two series of white mice are injected, with varying amounts of phenol in one and of the disinfectant in the other, to determine the least fatal dose of each drug, and the results are compared For some coal tar products he found the following values phenol, 100 per cent., tricresol, 90 per cent , lysol, 45 per cent , pyxol, 28 per cent , creolin, 19 per cent Clinically, however, the irritant character of a disinfectant more nearly determines its practical value, for the majority are used in such dilution as never to give general toxicity The relative nonirritating character of potassium permanganate and formaldehyd in good antiseptic strengths explains their popularity

SUMMARY OF FACTS REGARDING EXTERNAL DISINFECTANTS

The powerful germicides are few in number, of those studied only eleven (mercuric chlorid and oxycyanid, potassium mercuric iodid, iodin and bromin water, potassium permanganate, quinone, lysol, pyxol, silver nitrate and formaldehyd) being stronger than carbolic acid The majority of these are toxic, irritating, or so weakened by chemical change when in

Limitations of Hexamethylenamin Of all substances hexamethylenamin is the most efficient in the largest number of cases, but its limitations are so numerous and pronounced as to make its value felt only in selected cases, and it should not be given in the routine way that is at present almost universally practiced It depends for its action on conversion in an acid urine into formaldehyd Liquor formaldehydi, as shown in Tables 1 and 2, is a fairly good bacteriostatic and, therefore, well adapted for this purpose, but the splitting up of the drug into formaldehyd is dependent on certain factors which are not always present, so that good bacteriostasis is not always secured Urinary acidity and the reaction time of the conversion are the two most important factors The acidity of the urine is influenced by both metabolic and bacterial changes In the absence of bacteria the reaction is usually acid, and even when neutral or alkaline from either disease or diet, regulation of the latter and feeding acid-producing drugs, such as acid sodium phosphate or sodium benzoate, will quickly render it acid When bacteria which break down urea into ammonia and thus produce an alkaline urine are present, regulation of the diet and the feeding of acid-producing drugs usually fail to make the urine acid Under such conditions hexamethylenamin is useless The *Bacillus proteus vulgaris* readily decomposes urea so that in most urinary infections from it the urine is strongly alkaline Both staphylococci and streptococci are prone to decompose urea and the typhoid bacillus may sometimes break it up *Micrococci ureae* are very active alkalinizers But colon and paratyphoid bacilli probably never cause decomposition In the presence of certain infections it is, therefore, not always possible to secure an acid urine

TABLE 3—THE STABILITY OF DISINFECTANTS*

		Percentage Dilution of Substance		
		1 1 000, 5,000, 10 000, 15 000, 20 000, 25,000, 30,000, 35 000, 40,000, 45 000, 50,000	60 000, 70,000, 80 000, 90 000, 100 000	150 000, 200 000, 250 000, 300,000
Mercuric chlorid	Water	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 G G G G G
	Broth	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 G G G G G G G G G	G G G G G G G G G G
	Serum	0 0 0 0 0 0 G G G G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
Silver nitrate	Water	0 0 0 0 0 0 0 0 0 0 0 G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
	Broth	G G G G G G G G G G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
	Serum	0 0 0 0 0 0 0 0 0 G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
Ammonia sol		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 G G G	G G G G G G G G G G	G G G G G G G G G G
Iodin water	Water	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 G G G G G G	G G G G G G G G G G
	Broth	0 0 0 0 G G G G G G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
	Serum	0 0 0 0 0 0 0 0 0 G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
Formaldehyd	Water	0 0 0 0 0 0 0 0 G G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
	Broth	0 0 0 0 0 0 0 G G G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G
	Serum	0 0 0 0 0 0 G G G G G G G G G G G G	G G G G G G G G G G	G G G G G G G G G G

* In this table 0 indicates no growth after forty-eight hours, G, growth after forty eight hours

TABLE 4—THE PENETRATING POWER OF DISINFECTANTS

Time of Exposure Before Transplant From Collodion Sac	Percentage Dilution																														
	90%	80	70	60	50	40	30	20	10	1 20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	1,000	2 000	3 000	4 000	5 000
24 hours					1 0			3 0			3 G									4 0						5 0					
30 minutes					1 G						3 G						4 0			4 G			5 0			5 G					
20 minutes					2 0						3 G						4 0			4 G			5 G			5 G					
		1 G			1 G																										
10 minutes		2 0			2 0												4 G			4 G			5 G			5 G					
											3 G																				

In this table 0 = a negative transplant, G = a positive transplant, 1, alcohol, 2, alcohol with 3 per cent iodin, 3, phenol, 4, formaldehyd 5, mercuric chlorid

The simple chemical change from hexamethylenamin into formaldehyd is slow and gradual and it is seen that, even with a uniform excretion, the longer the drug is allowed to accumulate in the bladder the greater becomes its concentration and the more complete its conversion This necessary time factor completely nullifies the value of the drug as an internal urinary antiseptic in many urinary conditions Polyuria and frequent urination prevent this accumulation, and the constant outflow from the kidney, except in hydronephrotic cases, accounts for the fact that the drug is of little, if any, value as an antiseptic at the level of the kidney The same reason explains the poor results in cases with retention catheter and in all cases with urinary fistulas In postoperative prostatics, who particularly need an efficient urinary antiseptic hexamethylenamin is practically valueless until continence returns

The value of hexamethylenamin is greatest as a bladder prophylactic before and following instrumentation, when the above mentioned urinary conditions are not present, and, inasmuch as formaldehyd is about equally bacteriostatic toward all organisms, the usefulness of the drug in this group of cases will probably never be supplanted

Limitations of Other Internal Antiseptics With the exception of some of the dyestuffs all other substances that have been used for internal urinary antisepsis may be very briefly disposed of A glance at Table 1 will quickly indicate what might be expected from boric, salicylic and benzoic acids Salol, because of its conversion into carbolic acid in the urine, has been advocated, but carbolic acid is a very weak bacteriostatic and, clinically, the results of the use of the drug support its bacteriologic worthlessness The alkalies are equally inefficient It has been repeatedly shown that colon bacilli will grow readily in alkaline mediums, and the use of alkalies in the treatment of colon infections is justified for symptomatic and palliative reasons and not for their antiseptic value The iodids, because of their ready excretion by the kidneys and the high disinfectant power of iodin, have been proposed, but the occurrence of iodism and the lack of antiseptic power of the salts of iodin (potassium iodid, etc), make of these substances a failure Oil of sandalwood is a very weak antiseptic and has other objections It may be said, therefore, that the only efficient internal urinary antiseptics are hexamethylenamin and certain of the anilin dyes

The Value and Possibilities of Certain Dyestuffs The development of knowledge concerning the selective action of certain anilin dyes (first pointed out by Rozsahegyi in 1887) has followed three general lines that relating to vital staining, that relating to bacterial differentiation by means of special stains or medium impregnation (Drigalski, Conradi, etc), and that relating to antisepsis The antiseptic action of certain dyes is remarkably pronounced, and this selective and specific property portends their great future importance as urinary antiseptics Kriegler, in 1911, made note of the proportion between the basic nature and the germicidal power of dyes, and Browning and Gilman, in studying the selective action of dyes for different bacteria and the relationship of chemical structure to this action, found that the substitution of alkyl groups in the amido side-chains of the unsubstituted triphenylmethane compound, pararosanilin, which has weak bacteriostatic action, lead to the most powerful bacteriostatic substance known for staphylococci, completely inhibiting their growth in a dilution of 1 5,000,000 This same dye, hexa-ethyl violet, must be in a strength of 1 20,000, however, to inhibit the growth of the *Bacillus coli communis* The substitution of the ethyl group (C_2H_5) for the amino radicals in the unsubstituted diaminotriphenylmethane compound produces likewise an increase in bacteriostatic power One such product, "brilliant green," is almost as strongly inhibitory for staphylococci and at the same time much more actively antiseptic toward the colon bacillus than hexa-ethyl violet These same investigators made the interesting observation that serum modifies the antiseptic action of some dyes, as for instance, diminishing the action of hexa-ethyl violet slightly, of brilliant green considerably, but increasing that of diaminoacridin toward *B coli*, and typhoid, staphylococci and anthrax Recently Simon and Wood have shown that the antiseptic action of dyes is dependent, not at all on color, but on the presence of certain chemical groups which have basic properties, as, for example, the amino group (NH_2) It so happens that most basic dyes have right spectral colors, and most acid dyes, left spectral colors By taking basic left spectral dyes (fuchsin, phenosafranin, tolusafranin azin red, etc) and acid right spectral dyes (indulin R , acid violet, urania blue, etc) it may be shown that an acid dye, irrespective of color, is not bacteriostatic while basic dyes, likewise irrespective of color, may be bacteriostatic It does not follow that all basic dyes have this effect The replacement of the amino group by an acid radical—hydroxyl (OH) or carboxyl (COOH)—in an active basic dye leads to an almost complete loss of inhibitory effect Of interest in this connection is the conclusion of Evans and Shulemann that the reaction of acid dyes in the body, when used as vital stains, is dependent on certain conditions of solution They were able, for instance, to render a negative vital stain beautifully positive by changing its condition of solution (*Lösungszustandes*) thus disproving for acid dyes Ehrlich's side-chain theory This may also explain the nonspecific nature of acid dyes toward bacteria

The selective action of some of the common dyes has been more carefully studied Churchman has shown that gentian violet will inhibit the growth of almost all gram-positive organisms in a dilution of 1 100,000, and that methylene blue, in the same dilution, is bacteriostatic for staphylococci Lewis has emphasized the selective action of trypan red and of isamin blue for lesions of tuberculosis, and, following this lead, Krauss has since succeeded in preparing combinations of these dyes with iodin Methylene blue has been shown also to have a selective action for tubercle bacilli May studied the germicidal action of basic fuchsin which he found effective in a dilution of 1 1,000 within five minutes, toward bacilli of typhoid, colon, enterides (Gartner) and dysentery and staphylococci He also found that basic fuchsin is relatively nontoxic and very diffusible, and may be used in the bladder without irritation in a 1 100 dilution May further made the important observation, which we have confirmed, of a marked difference in the action of fuchsin in warm and cold solutions, the dye being for the most part almost inactive in the cold Dahlia has recently been advocated for infections, Simon using it in erysipelas and Ruhräh applying it in 4 per cent strength to the throat Many of the anilin dyes are quite toxic Churchman found that the injection of 10 c c of a 0 5 per cent solution of gentian violet in rabbits, was without effect in some but in others caused death within a few minutes, no explanation for which could be found at necropsy Gentian violet is irritant in the bladder, in which it produces a considerable inflammatory reaction

These facts, together with the known selective activity of the kidneys in the excretion of many dyes (phthalein group, indigocarmin, etc), definitely link this subject to the future of internal urinary antisepsis The application is necessarily limited, and each dye and all possible combinations, synthetic and otherwise, after the above biochemical indications, will have to be studied as to their power of antisepsis, their toxicity, irritant properties and stability in the body and their ready excretion in the urine Undoubtedly substances exist, or will be formed, which will prove ideal for selected infections Personal studies, limited by inability to secure dyestuffs and of which this report is preliminary, are briefly the following

METHYLENE BLUE

The particular and limited value of methylene blue as a urinary antiseptic has never been emphasized During the thirty years in which it has been used as a test of renal function, many facts regarding its excretion have been determined Only about 50 per cent of the dye is excreted by the kidneys, the remaining half being eliminated mostly in the stools, which often become as highly colored as the urine The pigment is not an individual chemical substance (Underhill and Claussen) and often undergoes decomposition in its passage from the blood, appearing in the urine in the form of leukoderivatives which are, for the most part, nonbacteriostatic (Mueller has found six of these chromogens) These end split-products may often be restored to the basic methylene blue by agitation, or by boiling after the addition of acetic acid Decomposition of the dye into chromogens may also occur as the result of bacterial activity I have always observed a loss of color in solutions of the dye in which bacteria grow The *Bacillus coli communis* will decolorize a 1 1,000 dilution but staphylococci will not cause loss of color until a dilution of 1 100,000 or greater is reached This partial or complete bacterial decolorization is a frequent observation in patients with pyuria, the urine in such cases often acquiring only a dirty green hue even when large doses of the dye are ingested Reactivation, or return to blue color, has often been beautifully observed when hexamethylenamin is given simultaneously This result is probably due to the urine content in formaldehyd which has been found by test-tube experiment to usually reactivate the dye The frequent presence, however, of an alkaline urine from urea decomposition in these cases largely destroys the associated value of hexamethylenamin

Subcutaneous injections of methylene blue are always painful The dye may be taken by the mouth, however, in relatively large doses Ten grains four times a day have been given, and have shown no toxic or irritating action From 3 to 6 grains is a good average dose, but 1 grain is too small The dye is contraindicated in large doses in cases in which there is severe nephritis, as it has been shown that the excretion of a small fraction of a grain in these cases may be prolonged for fifteen or more days

Personal studies show that methylene blue is a very weak and slow germicide It will not kill the staphylococcus, streptococcus or *Bacillus coli communis* under twenty-five minutes even in a 1 10 dilution, and even after forty-eight hours' exposure it shows little selective power as a germicide As a bacteriostatic, however, it is very selective and powerful in its action It completely inhibits the staphylococcus in a 1 150,000 dilution, the streptococcus in a 1 80,000, and the colon bacillus, however, in only a 1 1,000 dilution

Clinical results support the bacteriologic findings Inactivation of the dye from bacterial or metabolic decomposition greatly weakens its practical value The clinical results in several cases of urinary tuberculosis, such as relief from urinary frequency and irritation, may possibly be accounted for by the observed selective action of the dye toward tuberculous lesions

Other Anilin Dyes In view of the unfinished investigation of the toxic and biochemical properties of other dye stuffs when applied as urinary antiseptics, reference will only be made at this time to their bacteriostatic power Rosanilin acetate has a definite selective action toward *staphylococci and streptococci*, but its inhibitory power over the growth of colon bacilli is not much greater than its germicidal action for the same period of time (Kills *B coli* in forty-eight hours in a 1 800 dilution, but will not inhibit its growth in a weaker dilution than 1 1,000) The action of this dye, as well as that of the others studied, was seen to be markedly influenced by temperature There was a marked difference between the tubes kept at room temperature and those placed in the thermostat at 37 C

CONCLUSIONS

The foregoing considerations and findings may be summarized as follows

The treatment of urinary infection should be selective, according to the clinical findings in each individual case The clinical study should determine the type of infection, its possible source and the conditions accessory to its spread or chronicity The use of urinary antisepsis should always correlate these findings and supplement the necessary surgical or other measures

Treatment by disinfectants may be external or internal The properties required of a substance in order to give satisfactory external disinfection are a germicidal power which will kill the organism in the limit of time of exposure and with this, stability of chemical structure, penetrating action, but neither toxic nor irritating action No such ideal substance is known Because of this lack, clinicians have come to rely on strong inhibitory substances for external use An internal antiseptic, which will give constant inhibitory effect, will be more efficient than an indifferent external germicide used periodically The properties required of a substance for internal urinary disinfection are that it should be bacteriostatic in weak dilution, diffusible, stable, neither toxic nor irritating and largely eliminated by the kidneys No such ideal internal antiseptic is known

Hexamethylenamin is the most efficient in the largest number of cases, but has very definite limitations It is of value only by virtue of its conversion into formaldehyd which takes place gradually in an acid urine The alkalinity of the urine in infections which produce decomposition of the urea cannot in the majority of cases be changed by feeding acid-producing drugs The necessity of concentration and time for the accumulation of formaldehyd in antiseptic amount largely destroy the value of the drug for kidney antisepsis, except in some cases of hydronephrosis, for bladder antisepsis in cases with polyuria or frequent urination, except when retention in some form is present, in cases of urinary fistula, notably postoperative prostatics during the period of incontinence, and in cases with continual bladder drainage as in true incontinence or with retention catheter, and for urethral antisepsis no matter what the infection The greatest usefulness of hexamethylenamin is in bladder prophylaxis in cases in which the above urinary conditions are not present

A study of the selective antiseptic action of some basic dye stuffs, their stability and pentrating action, the innocuous nature of many and the known proclivity of the kidneys for their excretion emphasize the future importance of such substances as internal urinary antiseptics The bacteriologic findings with some of the substituted compounds of the rosanilin group indicate their possible application in the treatment of colon bacillus infections of the urinary tract The selective action toward tuberculous lesions of trypan red and allied dyes opens up an interesting line of therapeutic application

Methylene blue, in a dilution of 1 150,000 will inhibit the growth of staphylococci It is diffusible and relatively nontoxic, but only about half of the amount ingested is eliminated by the kidneys and, often, some of this in the form of inactive end split-products The absence of a deep blue urine indicates imperfect antisepsis, which may be due to this metabolic decomposition or to a delayed or deficient excretion as the result of renal disease, in which case continued use of the dye may cause severe renal injury

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The value as internal urinary antiseptics of other substances such as salol, oil of sandalwood, salicylic, boric and benzoic acids, is very limited Their use for antiseptic purposes in urethritis is not justified Relief of urinary irritation is more often better secured by the use of sodium bicarbonate

521-522 Physicians Building

ABSTRACT OF DISCUSSION

DR. J A FULTON, Astoria, Ore. Dr Hinman omitted the mention of one germicide which I believe has not been sufficiently studied—that is, heat. It is true that you cannot apply heat, perhaps to the entire urinary tract In antisepsis of the bladder where you use an antiseptic such as methylene blue, potassium or permanganate, they do not penetrate, but heat will penetrate. I cannot understand why the question of heat as a germicide has not been referred to because it does penetrate

DR. MARTIN KROTOSZYNER San Francisco An excellent urinary antiseptic which Dr Hinman did not mention is quinin which in doses of 10 to 15 grains if administered precystoscopically or preinstrumentally, exhibits excellent antiseptic properties, and in this respect according to my experience exceeds the efficacy of equally strong doses of hexamethylenamin With regard to the relative value of various external urinary antiseptic remedies I have found it to be the wisest plan to limit oneself to the use of one or two drugs and to become sufficiently experienced in their efficacy in order to obtain uniformly good results In my hands nitrate of silver has always exhibited better and more lasting results for lavage of the genito-urinary tract than any other silver component. Nitrate of silver has all the properties that Dr Hinman considers to be essential for the efficacy of an external urinary antiseptic. It is penetrating, it is antiseptic and it is besides that, flexible in its dosage, so that a patient who at first reacts very severely to a very weak solution gradually will tolerate injections of much higher concentrations Thus, I have been able to obtain excellent results from renal lavage with solutions up to 2 and 3 per cent.

DR. W F BRAASCH, Rochester Minn Silver nitrate is unquestionably a very valuable aid in the treatment of renal infection. Recently Geraghty called our attention to the use of a denser solution of silver nitrate advising as high as 5 per cent It has been my experience, however, that it is not necessary to use such dense solutions It is best to commence with a solution, say 1 500 or 1 1,000 and gradually work up to 1 per cent I think 1 per cent is just as efficacious as 2 or 3 or 5 per cent. Five per cent can cause considerable reaction, I have seen a number of cases that have given evidence of renal insufficiency as the result of a 5 per cent. injection of silver nitrate It is difficult to understand why silver nitrate should be of so much more value in some cases of renal infection than in others It has been my experience that silver nitrate is of value in the great majority of cases We have recently reviewed several hundreds of cases and there were very few that were not benefited by its use, and many of them were evidently cured.

Whole-Time Health Officers—You may ask if the small cities can afford whole-time men, why are the larger cities not employing whole-time men? I believe the answer is this —"politics" Apparently the only way a whole-time man should consider a position in one of the larger cities is to go as a loan from the State Board of Health, or from the United States Public Health Service. Under this system when it would seem advantageous he could return and a new man take his place—Report of the Public Health Commissioner of the Minnesota Public Health Association.

LATE RESULTS OF EXCISION OF THE TRANSVERSE PROCESS OF THE FIFTH LUMBAR VERTEBRA *

FRED J FASSETT, MD
SEATTLE

Notwithstanding the study given to the region of the lumbosacral junction in the past decade, so few reports of the results of excision of the transverse process have appeared that these three cases may be worth putting on record

CASE 1—A man aged 34 formerly a sailor, now a book salesman, was first seen, April 4, 1910 His complaint was of a 'binding" feeling and increasing pain of gradual onset from the hip to the heel on the back of the left lower extremity He recalled no strain or other injury The examination was negative except as follows There was a marked tenderness at about the top of the left sacro-iliac joint, a moderate list to the right and muscle spasm limiting all motions of the lower spine, when the knee was fully extended the left hip could not be flexed more than 45 degrees

The roentgenogram was negative except as to the transverse processes of the fifth lumbar vertebra, that on the left (the side on which there was pain) was of moderate size and its shadow did not in this plate, overlap the ilium or sacrum The process on the right was much larger, distinctly bifid and appeared to articulate with both the ilium and the sacrum (Fig 1)

During the two months following this examination, adhesive strapping a canvas belt, plaster jackets in the erect posture and in hyperextension and plaster spicas were applied Meanwhile the symptoms all increased The pain became so severe and constant that the patient eagerly accepted the suggestion of operation even though he knew that it was decidedly experimental in character At that time I knew that such an operation had been done by Dr Z B Adams of Boston, but was unable to learn either his technic or his results

Operation was performed in June, 1910 An incision about 4 inches long was made midway between the spinous processes and posterior-superior spine of the right ilium through skin, fascia and muscle to the bone It will be noted that this operation was on the side opposite to the side on which there was pain We removed as much of the bony process which we encountered as we dared, considering that the work had to be done almost exclusively by the sense of touch The fascia was closed with catgut and the skin with silkworm-gut The patient was in the hospital ten days The pain at night, which during the month before the operation had been the most distressing symptom, was temporarily relieved The pain about the left sacro-iliac joint persisted A roentgenogram taken two weeks after the operation showed that the transverse process had been possibly thinned but not removed by the operation

In October, four months after the first operation, the old symptoms had all returned October 18 a second operation was performed (Fig 2) The incision was made nearer to the crest of the ilium than before This made the approach to the transverse process more easy, but it was still very difficult To serve as a landmark, the transverse process of the fourth lumbar vertebra was first identified and, because it might give more room, removed with a wire saw The transverse process of the fifth was then exposed and an attempt made to pass a wire saw around it in the same manner but without success The process was then freed from the ilium and sacrum by blunt dissection and from the vertebra by the chisel At this point the fragment tipped forward on a hinge of fibrous tissue and was recovered and removed with great difficulty During this procedure there were several sharp twitches in the muscles of the right leg The wound was then closed as before During the next ten days the patient became gradually more comfortable, except for slight muscular stiffness n the back and paresthesia in the right foot The pain and decreased very rapidly so that the man was soon work He has worked steadily during the past four ears I have seen him occasionally during that time. His only complaint is of a weakness in the right foot This appears to be a slight but actual paralysis of the muscles of the anterior tibial group, for which no other cause can be found than trauma to the nerve roots at the time of operation In spite of this symptom the patient regards the operation as a distinct success

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* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association, San Francisco June, 1915

Case 2—A man, aged 20, a shingle weaver, was first seen July 6, 1911 He gave a history of trouble with the back for the preceding two or three years The disability had increased much more rapidly in the previous four months and had completely incapacitated him for work. The roentgenogram showed a transverse process of the sacral type on the left side of the fifth lumbar vertebra which formed a distinct articulation with the ilium There was a marked scoliosis, left dorsal, right lumbar It was impossible for the man even to approximate an upright position on account of the pain There was distinct tenderness over the left sacro-iliac joint

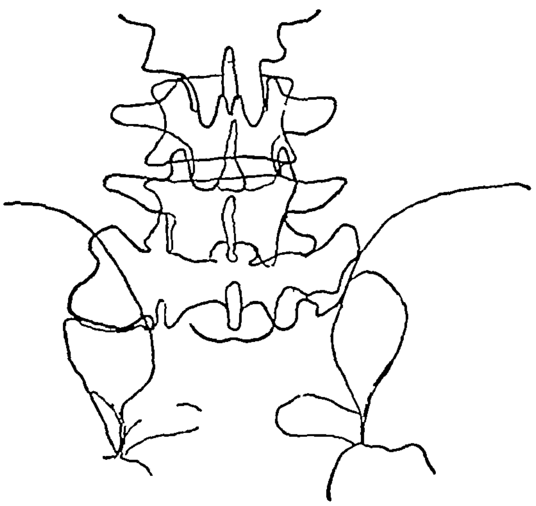

Fig 1—Appearance of right transverse process of fifth lumbar vertebra in Case 1 before operation

On July 15, 1911, operation was performed essentially as in the second operation on the patient in Case 1, except that the operation was on the same side as the pain and the transverse process of the fourth was not disturbed The roentgenogram taken soon after the operation showed that the transverse process of the fifth had been removed save for a narrow spur along the lower margin

Clinically the pain was considerably relieved and the posture much improved The man returned to work, but was unable to work all day because of the return of pain in his back. A year and a half from the first operation the symptoms were still present and a second operation was performed During this operation there was distinct jerking of the leg muscles Following the operation there was severe pain in the leg on the operated side This gradually disappeared but there remained a partial paralysis and atrophy in the anterior tibial group of muscles of the left leg

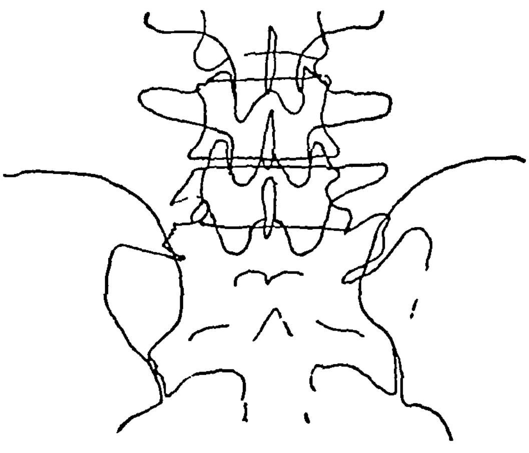

Fig 2—Appearance of right transverse process of fifth lumbar vertebra after second operation

The man was last seen May 1, 1915, two and one-half years after the last operation The pain has been wholly absent for more than two years, the posture shows no trace of the former scoliosis The weakness in the anterior tibial group of muscles is still present, and the patient says that this occasionally troubles him in running He regards this, however, as of very slight importance compared with the disability from which he was relieved by the operation A roentgenogram taken six months after the operation and another taken this year are suggestive of partial regeneration of the process and raise the question whether this regeneration might be expected to occur[1]

Case 3—A man, aged 35, an electrician, was first seen Jan 6, 1914 For several years, on making certain motions, he had "catches" in his lower back These have several times been so severe that the patient was taken home in the ambulance The examination was negative except as to the posture and as to the roentgenogram The patient stood with an exaggerated lordosis, but no lateral deviation When the lordosis was most marked, that is, when the patient wholly relaxed, there was slight pain in the middle line where the spinous process of the fifth lumbar appeared to overlap the spinous process of the first sacral There was little muscle spasm, but previous experience had made the patient very loath to attempt certain movements, especially forward bending followed by rotation to the left

The roentgenogram showed a fifth lumbar vertebra with transverse processes of an intermediate type, the shadows of which overlapped the shadows of the ilium in varying degrees in different plates (Fig 3) There appeared to be no such complete articulation as was found in the preceding cases All the customary methods of fixation were faithfully tried, but nothing short of a full-length plaster jacket was adequate to protect against the painful attacks As this interfered seriously with the man's occupation, he sought relief from practitioners who promised more than I could conscientiously promise One week later he was found in a hospital in genuine agony as a result of an osteopathic or chiropractic "adjustment" received the previous day The patient had spent the night on the floor of the practitioner's office quite unable either to move or to be moved

Two weeks later (April 1, 1914) operation was performed on the right side in a manner much like that of the second operation in Case 1 This operation was followed by almost complete sensory paralysis in the right leg There was no loss of motor power On the twenty-fifth day the pain was largely relieved and the anesthesia had given place to a paresthesia The patient left the hospital, but used crutches for about ten days During the summer, fall and winter of 1914, the patient was able to do hard work as an electrician, crawling into low and narrow spaces with no return of his old pain The side of the back which was operated on has remained free from pain from that time until the patient was last seen, May 20, 1915 (Fig 4)

In January, 1915, however, the patient worked for a long time leaning over a low railing This was followed by a series of "catches" somewhat similar to the old ones, but less severe and strictly confined to the left (the unoperated) side The patient had been so impressed by the relief obtained on the other side that he argued that the two sides looked so much alike in the roentgenogram that operation should be done on the other side as well In preparation for this operation, some dissections were made with this problem in mind Could an approach to the transverse process be found so that, guided by the sense of sight as well as touch, the operator might excise the bone? As a result of these studies a method was devised which was employed in the next operation, which was performed Feb 2, 1915 A curved incision with its convexity outward was made from the second lumbar to the third sacral spine The skin flap was reflected inward to the middle line A muscle flap, consisting of the lower end of the erector spinae group and its aponeurosis, was detached from the crest of the ilium, the posterior surface of the sacrum and from the lumbar spinous processes and reflected upward This left a fossa having for its walls the crest of the ilium on one side and the spinous processes and laminae on the other, and for its floor the articular processes, and at a much deeper level the transverse processes of the fourth and fifth lumbar vertebrae The transverse process of the fifth was separated from the vertebra with a chisel It was found attached to the ilium by a strong fibrous band As to whether or not anything representing a bursa was present, I am unable to say The process was separated from the ilium and from the ligaments and from the layer of fat on its ventral surface by blunt dissection The muscle flap was replaced and its aponeurosis was sutured in place with kangaroo tendon and heavy chromic catgut The skin flap was replaced and sutured with silkworm gut. No fixation was applied

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[1] This man was a patient of Dr Park Weed Willis of Seattle, who showed me the patient while under his treatment, and permits me to include the case in this report This case and the preceding one were reported by Dr H B Thompson in Northwest Medicine in 1913

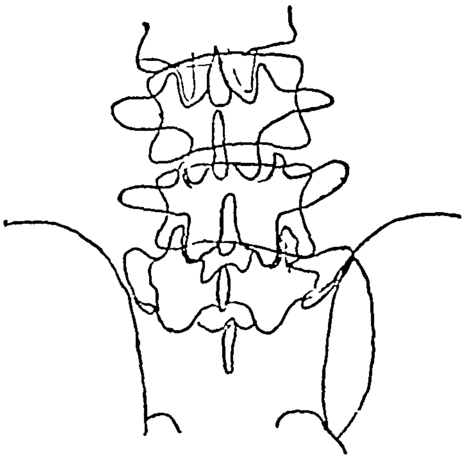
Fig 3 —Appearance of transverse process of fifth lumbar vertebra in Case 3 before operation

The symptoms following this operation were less severe than those following the first. There was paresthesia but no anesthesia in the lower extremity and the hospital stay was one week less than before. The convalescence appeared to be quite promising when on February 22 the patient slipped and fell backward, striking the exact center of the field of the second operation against the sharp corner of a heavy chair

This was followed by severe pain and stiffness in the muscles of the back and an increase of the paresthesia and tenderness in the leg and foot After a few weeks' rest, massage of the back was employed, which distinctly hastened the disappearance of symptoms both in the back and the leg This man was last examined May 20, 1915 (almost four months after the last operation), he was just beginning to go without his crutches, and to do gymnastics, which he had found helpful in restoring his strength after his first operation His greatest complaint at that time was of an intense tenderness and burning in the foot, but especially in the upper surface of the foot and the anterior surface of the leg

It is to be regretted for many reasons that the question of the relative merits of the two methods of approach has been beclouded by the unfortunate fall which marred what appeared to be an otherwise satisfactory convalescence.

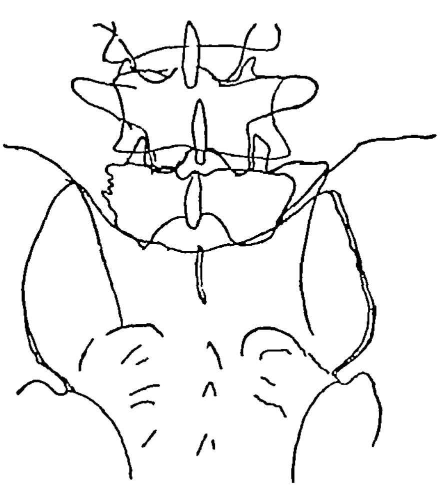
Fig 4 —Appearance of transverse process of fifth lumbar vertebra in Case 3 after first operation.

COMMENTS

These three men appear to have obtained, through this operation, permanent relief from lumbar or sciatic pain which had not been relieved by a faithful trial of many other methods

The difficulties and dangers of this operation are sufficiently great to cause it to be regarded only as a method of last resort

The chief danger appears to lie in injury to the great nerve trunks, and of these, the trunk containing the fibers which go to the anterior tibial nerve appears to be particularly exposed Since these fibers are usually traced to the first and second sacral nerve roots the reason for this vulnerability is not obvious

The question of the mechanism by which the pain associated with these transverse processes is brought about has been the subject of considerable study The fact that in one of the cases relief followed the removal of the process on the same side as the pain and in another the removal of the process on the side opposite the pain, makes the theory of simple pressure of the process against the nerve trunk seem hardly adequate The theory that the process furnishes a point about which, as a fulcrum, an extreme leverage is brought into play when the upper parts of the body start to rock on the lumbosacral joint, seems to me quite plausible Such a leverage, in an unguarded movement, would strain every joint in its neighborhood including, of course, the sacro-iliac joints It has been suggested that certain anatomic types are prone to lumbosacral trouble Is it not possible that the unfortunate leverage above described is one very efficient means of straining the sacro-iliac joint? If it be this function of a fulcrum in which inheres the possibility of trouble, it would seem advisable not only to remove the part of the process in actual contact with the ilium, but to amputate the process as near the body of the vertebra as possible In other words, it is desirable that even in the position of maximum lateral bending the process should be unable to touch the ilium or the top of the sacrum

At least four methods of approach to this joint have been suggested the simple incision through the erector spinae muscles, the osteoplastic reflection of a portion of the crest of the ilium, the ventral route, and the muscle-flap method herein described These three cases simply show that the process can be removed without serious damage by the first method or by the last It would appear that a certain number of cases will present themselves in which the excision of the transverse process is the proper method of treatment In view of this fact the question as to the best method of approach is one which is worthy of further study

1163 Empire Building

ABSTRACT OF DISCUSSION

Dr M S Henderson, Rochester Minn While these spinal abnormalities are not common, they do occur in the cervical and in the dorsolumbar regions In the fifth lumbar we frequently see a transverse process which is really an exaggeration of the costal process of the transverse lumbar vertebra I think in the majority of cases they give no symptoms, but when definite and severe symptoms are present they should be operated on I have seen probably thirty of these cases and operated on only three. My technic has been a little different from Dr Fassett's, in that I have not considered it necessary to chip off the entire process but simply knock off the exaggerated costal element of the transverse process so it would not impinge on the ilium Whether this is sufficient or not I cannot say, because my cases have not been numerous enough One patient did not do very well One, so far as I know is cured and the other is too recent to report as to the definite end-results, I operated on her only two months ago, but her pain has ceased It is difficult to chip off the process, and I think Dr Fassett's method of performing the operation is good .None of my patients has had disturbances of the nerve afterward, perhaps because I did not go far enough to remove the entire process There certainly is a group of cases which should be operated on, but I believe the majority of cases, as in cervical ribs, give no symptoms, and probably should be let alone

Dr E W Ryerson, Chicago I have operated on only one of these patients, a woman from South Carolina, who had a very large bifid process She had undergone two laparotomies on the left side and nothing was found, so that it was pretty evident she had a great deal of pain from this condition I found the operation unusually difficult, but it was easy to get down to the process by making an incision well to the outer side of the erector spinae muscles If one goes through the muscles not sufficient room can be gained, and it is not perhaps well to cut through such a large body of muscle, but going just to the outer side of the muscle the access is very easy to the outer part of this transverse process, although it is extremely difficult to get it out In this operation I only got out the upper half of this bifid process Nevertheless this patient was much relieved She had paresthesia for three or four days afterward, but this entirely disappeared Apparently she is at present free from symptoms The difficult thing to understand is why removing the top of a bifid process which was not articulating with the ilium should do any good, but the fact is that it has relieved this patient We do not know all about the nerve disturbances and nerve supplies, because, as Dr Fassett said, the supply for the anterior tibial nerve comes from higher up, but the paresthesia my patient complained of was distinctly over the anterior tibial region I cannot see how these patients can get more relief than by submitting to an operation, because they will not consent to wear through life a long plaster jacket or other apparatus

Dr Wallace Blanchard, Chicago I reported at the last meeting of the American Orthopedic Association removal of the transverse process of the fifth lumbar vertebra that impinged on the wing of the ilium It showed an elongation about twice the normal, as compared with the transverse process of the other side A perpendicular incision of about 5 inches through the erector spinae muscles and direct down to the transverse process, removing by chisel and forceps, was not an overdifficult operation The transverse process could be easily reached and removed After resection the Roentgen ray showed a stump and a space between the stump and the wing of the ilium There were no bad symptoms following the operation—of anesthesia, hyperthesia, etc, that have been told of by Dr Fassett, and the patient made a good recovery The patient had been paralyzed from the shoulder down through the left side to the left leg, and had had two abdominal operations, and the appendix had been removed, all in the hope of relieving painful conditions that were undoubtedly caused by the impingement of the transverse process and the ilium The cure was immediate and there were no bad symptoms following the operation

Dr Roland Meisenbach, Buffalo In connection with the operation for the removal of the transverse process of the fifth lumbar vertebra, a point that should be emphasized is that great care must be taken so as not unduly to divide nerve structures in the region of the lumbar plexus I think that operation of these cases should only be undertaken in the severe type, and all other means should first be attempted to relieve the symptoms There is one case that is of interest, which is rather unique, and which was sent to me for relief It was a man of good musculature who had been employed at heavy work. At the time of the accident he was holding a rope taut The rope suddenly parted and he was thrown backward to the ground He complained of severe pain in the lower part of his back and was taken to the hospital At the time I saw him, a few months after the accident, he complained of severe pain whenever he turned around in bed or attempted to walk, or on any lateral motion of the body The radiograph showed that the transverse process of the fifth lumbar vertebra had been obliquely fractured and the fragments separated and displaced, so that the outer portion was drawn downward A large callus had formed This callus expanded and amalgamated with the ilium and the sacrum To give the man relief it was necessary for me to remove the process, which was done I think in general that a small incision should be made By a small incision I mean after the first layer of muscles has been divided, and I also think it is much better to divide the muscle fibers with blunt dissectors until one reaches the transverse process This minimizes the hemorrhage and facilitates the removal of the process If the periosteal dissector or a chisel is used to peel the periosteum of the process, the chain saw may be brought around and the process removed I think the use of a chain saw is much better than the use of a chisel, because with the chisel the process is brought out in a piecemeal fashion and there is more danger of injuring the structures I wish also to emphasize the fact that just anterior to the process one is apt to meet nerve structures and ganglia that should not be touched with the instrument In one instance I remember that the patient suddenly stopped breathing when these were touched, and I only mention it as a point of interest which should be kept in mind in removing the transverse process of the fifth lumbar vertebra

Dr. J P Lord, Omaha I wish to report the development of pain on the second day of a recent case The pain became progressively worse after twenty-four hours Coming on so late, it occurred to me that it was induced by hemorrhages and infiltration This might readily be imagined to take place because of the loose tissues in this region, the exudate enveloping these nerve trunks There was muscle paralysis also, and this lasted for four or five days, when rapid improvement ensued I would suggest this as a possible explanation of the pain

Dr Fred J Fassett, Seattle There is only one thing to add, and that is on the matter of a choice between a chisel and the wire saw With me it was not a matter of choice at all I started in equipped with very little except my knife and wire saw, it looked so easy in the roentgenogram But in none of these cases did I use the wire saw, except when I removed the fourth process When it comes to the fifth, the passing of the wire saw around the neck of the process required more nerve than even I have developed

ANALYSIS OF FOUR HUNDRED CASES OF LOBAR PNEUMONIA *

J G CROSS, MS, MD
MINNEAPOLIS

There were 83,778 deaths from pneumonia in the United States registration area in the year 1913, or 132 4 deaths from this disease per hundred thousand population In Minneapolis there were 348 deaths from the same cause, or 104 per hundred thousand population For comparison, in the same year 80,812 persons died from pulmonary tuberculosis in the United States registration area, or 127 7 per hundred thousand population In Minneapolis there were 383 deaths from pulmonary tuberculosis, or 118 per hundred thousand population In 1914 there was an increase in the death rate from pneumonia and a decrease in the death rate from pulmonary tuberculosis

These figures are presented to fix our attention again on the importance of pneumonia With cancer and pulmonary tuberculosis it forms a dread trio The death rate from pneumonia has not decreased In some localities statistical observation shows that not only is pneumonia on the increase but in certain outbreaks it is actually more fatal than it was in former periods of time From the figures given above it would seem that less advance has been made in the prevention and treatment of pneumonia than in prevention and treatment of tuberculosis

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* Read before the Minnesota State Medical Association, Rochester, Oct 1, 1915

In an attempt to study certain features of pneumonia, data in a large number of cases of lobar and bronchopneumonia at the Minneapolis City Hospital for the years 1911, 1912, 1913 and 1914 have been collected and analyzed under the headings of age, sex, occupation, date of onset, character of onset and initial symptoms, later symptoms, he maximum temperature, laboratory findings, physical findings, the white blood count, the complications, the termination, whether by death, lysis or crisis, and necropsy findings, if a postmortem examination was made This analysis has borne out many conclusions which are not new, and has verified some impressions which needed the corroboration of actual statistics In the present paper I intend to present an abstract of the results of this analysis as regards lobar pneumonia alone

TABLE 1—MORTALITY STATISTICS

Causes of Death	U S Registration Area 1913		City of Minneapolis			
			1913		1914	
	Number	Per 100 000	Number	Per 100 000	Number	Per 100 000
All causes	890 948		3 862		4 115	
Pulmonary tuberculosis	80 812	127 7	393	118	385	112 09
Pneumonia	83 778	132 4	348	104 3	433	126 06
Cancer	49 928	78.9	276	81 9	311	90 5

As will appear in a later statement as to the time in the disease at which patients are admitted, it is evident that the mortality of lobar pneumonia at the City Hospital is much higher than it would be under average conditions in private practice Several factors contribute to this First of all, the City Hospital admits that large class of homeless or destitute patients who are careless of the onset of an acute disease It is the rule that these people neglect the first few days of an acute illness until compelled to seek help through inability to care for themselves Many patients are weakened by bad hygiene or vicious habits, together with irregular, too little or improper food Many are chronic alcoholics Acute alcoholism also plays a larger role than would be the case in the same number of private patients Another factor in the free hospital treatment of pneumonia, as in other diseases, is the frequent lack of intelligent cooperation on the part of the patient. Ignorance of disease and fear undoubtedly have a great deal to do with the outcome

Another striking fact brought out is that not only do the number of cases vary in different seasons and the same season of different years, but the mortality is much greater sometimes than at others This difference in mortality has not been satisfactorily explained and is probably due to the combination of a number of causes rather than to any one variable factor There is undoubtedly a difference in the virulence of the pneumococcus infection, but this alone does not explain the variations in mortality or the incidence of the disease The undoubted fact that many people harbor the pneumococcus in their respiratory tracts, without becoming ill, shows that individual resistance plays a very great part in the number of cases in the presence of infection The influence of season is, of course, apparent

There were 369 cases of lobar pneumonia at the City Hospital in the four years 1911, 1912, 1913 and 1914 Of these, 117 patients died—a mortality of 31 per cent Chart 1 illustrates the death rate at the ages from 1 to 5, 5 to 10 and then by decades It was found necessary in analyzing the cases of children to separate those under 5 and over 5, the mortality was so strikingly different in the two five-year periods As will be seen, the mortality in the succeeding decades rises steadily and consistently

In Chart 2 is shown the termination of the cases in which the patients recovered by lysis or crisis, according to the same age periods

As to the day on which crisis took place, we find a surprising condition of things in this series of cases There were 125 cases in which the exact date of onset of the disease and the time of crisis could be determined It is found that there is no regularity in the time at which the crisis occurred Table 2 illustrates this fact It will be seen that while in 80 per cent of the cases the crisis occurred before the tenth day, in seven cases it fell on the tenth, in nine, on the twelfth, in six, from the seventeenth to the twenty-first day, and in two was delayed until one month after the onset

TABLE 2—DAY OF CRISIS AFTER ONSET IN 125 CASES OF LOBAR PNEUMONIA

Days After Onset	No of Cases
3	12
5	23
6	4
7	24
8	22
9	16
10	7
12	9
17 to 21	6
1 month	2

TABLE 3—INITIAL SYMPTOM IN 264 CASES OF LOBAR PNEUMONIA

Symptom	No	Per Cent.
Chill	121	46
Pain	38	14
Cough	33	12
Headache	21	7
Vomiting	12	4
Fever	12	4
Other symptoms	27	10

In 264 cases the initial symptom was definitely known (Table 3) In 121, or 46 per cent, a chill ushered in the disease, next most common was pain in the side, back or chest, thirty-eight cases, or 14 per cent, had this first, in thirty-three, or 12 per cent, a cough was the first thing evident, in twenty-one, or

7 per cent, it was headache, in twelve, or 4 per cent, vomiting was first noticed, in twelve, or 4 per cent, fever only, and other symptoms of various nature in twenty-seven cases, or 10 per cent These symptoms naturally occurred in combination or one rapidly following the other, but it is intended to note in this connection only that which first called the attention of the patient to his abnormal condition

Examination of the urine (Table 4) shows the presence of abnormality in 237 of the 369 cases This does not mean, however, that the remaining patients did not have abnormal urine findings Many of our patients came in moribund, and for that or some other reason the urine could not be obtained in every case In the 237 cases, however, sixty-one, or 25 per cent, showed the presence of albumin, twenty-seven, or 11 per cent, showed casts in the urine, and in 149 cases, or 63 per cent, both albumin and casts were present

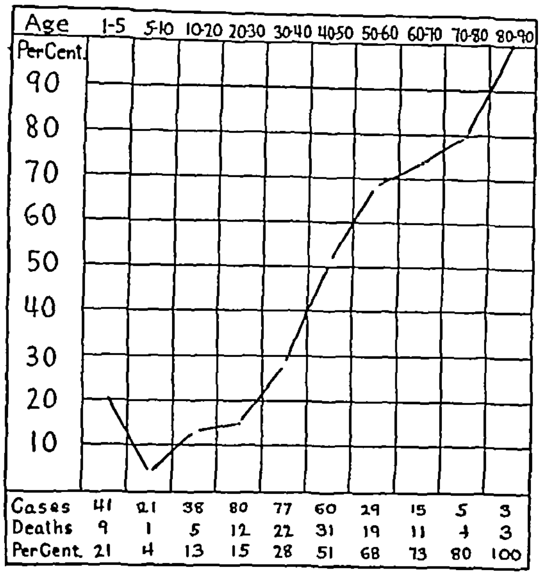

Chart 1 —Deaths from lobar pneumonia by age decades.

It is interesting to note the location of the consolidated area in the lungs (Table 5) In 333 cases this has been recorded In thirty-one, or 9 per cent, the consolidation was in the right upper lobe, in ninety-nine, or 29 per cent, in the right lower lobe, in ten, or 2 per cent, in the right middle lobe, in twenty-one, or 6 per cent, in the left upper lobe, in eighty-nine, or 26 per cent, in the left lower lobe The entire right lung was involved in seventeen cases, or 5 per cent, the entire left side in eleven, or 3 per cent The notation of "double lobar pneumonia" is made in twenty-nine cases, or 8 per cent In twenty-six cases, or 7 per cent, no area of dulness could be made out

TABLE 4 —EXAMINATION OF URINE IN 237 CASES OF LOBAR PNEUMONIA

Findings	No	Per Cent
Albumin present only	61	25
Casts only	27	11
Both albumin and casts	149	63

TABLE 5 —LOCATION OF CONSOLIDATION IN 340 CASES OF LOBAR PNEUMONIA

Location	No	Per Cent
Right upper lobe	31	9 2
Right lower lobe	99	29 2
Right middle lobe	10	2 9
Left upper lobe	21	6 2
Left lower lobe	89	26 2
Entire right side	17	5
Entire left side	11	3 2
Double lobar	29	8 5
No area of dulness	26	7 5

These figures agree in the main with those of Preble's 9,333 cases collected in 1904

It is found in the foregoing that in 67 per cent of the cases the leukocyte count ranged between ten and twenty-five thousand, as given in Table 6

Leukocytosis in lobar pneumonia deserves consideration In this collection of cases an attempt was made to discover the relation, if any exists, between the number of white blood cells and the course of the disease For this purpose, cases with complications, especially suppurative conditions, were excluded Children under 14 years of age were also excluded Those remaining were classified according to the number of leukocytes found, without regard to age, amount of consolidation, or other conditions As will be seen from Table 7, the six groups have been made according to the number of leukocytes and the percentage taken of cases in each group, which ended in lysis, crisis or death

A study of Table 7 presents some interesting features The selection of uncomplicated cases does not, of course, give the same percentage of deaths or termination of lysis or crisis, as does the whole series of cases, including complications and all ages It is seen at once that a leukocytosis under 10,000 gives 33⅓ per cent of deaths, which is in accordance with our general knowledge that a low resistance with low leukocyte reaction gives an unfavorable prognosis We find again that a white count between ten and fifteen thousand or between twenty and twenty-five thousand gives us nearly the normal rate of mortality, namely, 22 and 24 per cent Between fifteen and twenty thousand leukocytes strangely seems to give a lower mortality, for which no explanation is offered and which may mean nothing With the higher white counts above 25,000, the mortality is lower by one half, being only 11 3 per cent

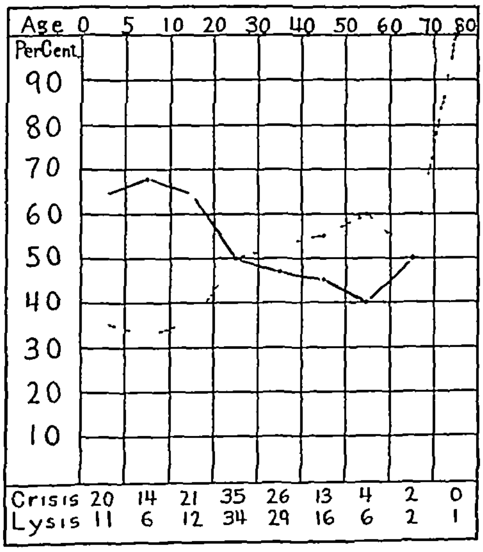

Chart 2 —Termination in 369 cases of lobar pneumonia by lysis and crisis, solid line, crisis cases, broken line, lysis cases

TABLE 6 —LEUKOCYTE COUNT IN LOBAR PNEUMONIA

Count	Per Cent
Under 10,000	9
Between 10,000 and 15,000	30
Between 15 000 and 20 000	22
Between 20 000 and 25,000	21
Between 25,000 and 30,000	10
Between 30,000 and 35,000	3
Between 35 000 and 50,000	1
Above 50,000	2 5

It may be concluded then, as far as mortality from lobar pneumonia is concerned, that 'the higher the white blood count the better the prognosis, and that a count of 25,000 or over is decidedly more favorable than under 25,000

We next notice that the proportion of the cases terminating in lysis and crisis is rather uniform until the white count reaches 20,000 or over Between twenty and twenty-five thousand an equal number of cases ended in each way. Between twenty-five and thirty thousand there is a decided preponderance of cases ending in lysis in the proportion of 1:2. When the white count is over 30,000, however, this proportion is almost exactly reversed, there being 33⅓ per cent. ending in lysis and 55.4 per cent. in crisis.

As has been stated, many of the patients in this series were admitted at a relatively late date in the course of the illness. These might roughly be divided into two classes. In the first division are those patients who were admitted in the first acute stages and in another class those in whose cases recovery was delayed beyond the first two weeks and who were brought in later either for delayed resolution or some complication. Without, however, thus classifying them, we find that it is very rare for a patient with lobar pneumonia to be admitted before the third day after the onset, and that 70 per cent. of them are admitted on the third, fourth, fifth, sixth and seventh day in about equal numbers. The bearing of this fact in our mortality records is obvious.

An analysis of cases of bronchopneumonia was made at the same time as the lobar cases. As bronchopneumonia, however, presents such a different aspect and much more varied etiology and course, this abstract does not cover that class of cases.

TABLE 7.—RELATION OF LEUKOCYTOSIS TO THE COURSE OF LOBAR PNEUMONIA IN 184 CASES

No.	Leukocytes Per Cent.	Lysis Per Cent.	Crisis Per Cent.	Deaths Per Cent.
From 5,000 to 10,000	9.8	38.8	27.7	33.3
From 10,000 to 15,000	27	44	32	24
From 15,000 to 20,000	26	41.6	39.1	19.9
From 20,000 to 25,000	19.6	38.8	36.8	22.4
From 25,000 to 30,000	7.6	57.1	28.5	11.3
30,000 and over	9	33.3	55.4	11.3
Totals		41.6	36.9	21.2

The average length of stay in the hospital of those patients with lobar pneumonia who recovered is between two weeks and one month, the larger number remaining about three weeks. It is impossible to go into the question of the complications in the present abstract. In many instances the connection between pneumococcus infection and the complications is not traceable, or at least was not followed out, and a discussion of the ordinary complications would take more time and space than can be expended in this connection. It may be mentioned, however, that the complications noted in the foregoing series included otitis media both with and without mastoiditis, phlebitis, empyema, myocarditis, acute corneal ulcer, decubitis, acute arthritis, all of the different forms of pleurisy, nephritis, meningitis, pulmonary abscess, bronchial asthma, gastro-enteritis, endocarditis and gangrene of the lung.

Donaldson Building.

Duration of Incubation of Syphilis.—One of the editors of the *Annales de Dermatologie*, G. Thibierge publishes in the July issue a study of this subject. His data establish that in the vast majority of cases the incubation period ranges from fourteen to forty-two days, but that cases are on record in which the interval before symptoms developed was fifty, sixty and ninety days. He cites various authorities to show that the minimum seems to be ten days. In monkeys the range was ten to forty-nine. The average in man is between twenty-five and thirty days.

INFECTIOUS DISEASES

THEIR ADMINISTRATIVE CONTROL IN DIFFERENT CITIES OF THE UNITED STATES

S. DANA HUBBARD, M.D.
Chief, Division of Infectious Diseases, Bureau of Preventable Diseases, Department of Health
NEW YORK

The Department of Health of New York City, having made some changes in the rules and regulations regarding certain infectious diseases in order to be consistent with the teachings and opinions of members of the medical profession and the scientific knowledge of today, desired to ascertain the opinions of eminent sanitarians throughout the country regarding these matters.

A questionnaire was therefore sent to the health authorities of sixteen of the largest cities in the United States.

QUESTIONNAIRE

Question 1.—What procedure have you regarding persons exposed to scarlet fever and measles and who are immune by reason of having had this disease?

A. Exclusion from place of business when connected with the sale or handling of dairy or food products.

B. Exclusion of children from schools, it being assumed of course that the patient ill with either scarlet fever or measles is practically and efficiently quarantined.

Atlanta. A. Persons exposed to scarlet fever and measles must not handle food products offered for sale.

B. Children are excluded from school, but are allowed on the streets.

Baltimore. A. They must not remain on the premises in which there is a case of disease. If there is any doubt that this order will be carried out, the individual is prevented from attending to the food and dairy business.

B. If the children are removed to another house, then they can attend school.

Boston. A. Persons who have been exposed to scarlet fever and measles and who are protected by a previous attack of these diseases are not held under observation by this department unless engaged in the sale or handling of food or dairy products. If a case of scarlet fever occurs in the family of such a person unless the patient is immediately removed to the hospital, persons in the family are forbidden to engage in the business of handling of food or dairy products. As regards measles no action is taken. I am of the opinion that this disease cannot be carried.

B. Such children are not excluded from school.

Chicago. A. In scarlet fever we exclude the person unless residence is changed during quarantine. In measles, no.

B. In scarlet fever, yes, unless change of address and furnish certificate of attack from physician. In measles, no, provided a certificate of immunity from physician is furnished.

Cincinnati. Quarantine for scarlet fever and diphtheria applies to all members of the family. We have an unwritten law that the breadwinner may continue his occupation, provided the patient is isolated and there is no contact.

A. If the parents are engaged in handling food or dairy products, patient must be removed to the hospital or the industry is closed.

B. In case of scarlet fever, diphtheria and measles, all children in the same family are excluded from school until the quarantine is raised by the health department. The history of a previous attack is not accepted as a sufficient reason that persons who have been exposed to scarlet fever, diphtheria or measles should return to school.

Cleveland. A. Persons exposed to measles and who are immune by reason of having had the disease are not excluded from business of any character. Persons exposed to scarlet fever are excluded from business.

B. Children who have had measles may attend school from a house in which the disease exists. They may attend school after eight days after being exposed to scarlet fever, provided they leave the house harboring the disease.

Detroit. Persons exposed to scarlet fever or measles, and who are immune by reason of having had the disease, are allowed to go following the disinfection of clothing and an antiseptic bath.

A. Such persons are excluded from handling of food or dairy products during period of incubation.

B. Exposed immune children are not excluded from school provided they have been properly released, as above stated, and taken to another house.

New Orleans. A. If residing at infected premises, complete exclusion is required of such persons. If place of abode is changed to a noninfected one, no exclusion after certain sanitary precautions have been observed.

B. Same requirements are as given in preceding answer.

New York City. A. In measles, no. In scarlet fever, all food handlers stop work or change address.

B. If case is satisfactorily isolated, immunes may return to school at once.

New York State. A. When a case of scarlet fever or measles exists on any farm or dairy producing milk, cream, butter or other dairy products for sale, it shall be the duty of the physician in attendance to report immediately to the local health officer the existence on such farm or dairy of such cases. It shall be the duty of the health officer to report immediately to the state commissioner of health, by telephone or telegram, the existence on such farm or dairy of such cases, together with all facts as to the isolation of such cases, giving the names of the localities to which such dairy products are delivered.

When a case of scarlet fever exists on any farm or dairy producing milk, cream, butter, cheese or other foods likely to be consumed raw, no such foods shall be sold or delivered from such farm or dairy, except under the following conditions:

(a) That such foods are not brought into the house where such case exists.

(b) That all persons coming in contact with such foods eat, sleep and work wholly outside such house.

(c) That such persons do not come in contact in any way with such house or its inmates or contents.

(d) That said inmates be properly isolated and separated from all other parts of said farm or dairy, and efficiently cared for, and

(e) That a permit be issued by the health officer.

B. In cases of measles, schoolchildren are excluded until recovery and disinfection of person, at least ten days from onset. In cases of scarlet fever, at least thirty days and until discharges have ceased and disinfection of person.

Omaha. In scarlet fever, thorough fumigation of clothes, and a bath are required, and patients are obliged to leave the house in which the disease is quarantined or be quarantined there. In measles there is no restriction if the persons have had the disease.

Philadelphia. A. No person is permitted to go from the quarantined premises to engage in the sale or handling of food or dairy products. We do not permit immunes to remove to another residence after disinfection, etc., and to engage in the said business.

B. All those associated with schools, teachers, children or janitors, who have had scarlet fever, and are therefore immune, may, after an antiseptic bath and disinfection of clothing, remove to premises in which there are no children and may return to school in ten days after such removal on notice received from the bureau of health. If continuing to reside at home, they must not be readmitted until examination by an inspector and notice received from the bureau of health. In measles such children after removal to premises at which there are no children may return to school fourteen days after such removal on notice received from the bureau of health.

Pittsburgh. In scarlet fever and measles, after removing from the house under quarantine to a house in which there are none but adults, they may continue their occupations.

A. Must remove from the place of quarantine, and, if a grocer, may after the expiration of eight days return to his work. If a dairyman, he must remain away from the dairy during the entire period of quarantine.

B. Thirty days for scarlet fever contacts and sixty days for patient. Measles, twenty-one days.

Providence. No person infected with or living in a family where there is typhoid fever, scarlet fever or diphtheria shall in any way handle or deliver milk or cream or shall serve as cook or waiter in any hotel, boarding house or restaurant. No person living in a family in which there is a case of scarlet fever shall attend school until the warning sign has been removed, or if the patient has died or been removed from the house, until one week after such death or removal. The health officer may enforce this rule against all persons living in the house. No persons living in the house, but not in the family in which there is a case of scarlet fever, shall attend school until one week after the case has been recorded and until such person has been found to show no symptoms of the disease, but any person who has previously had the disease may, at any time, be permitted by the health officer to attend school. No person living in a family where there is a case of measles shall attend school for fourteen days, except that this rule shall not apply to persons who have previously had measles.

St. Louis. Persons who are known to have had scarlet fever and measles, and who have been exposed to the contagion are not restricted in their school attendance or work, provided that the fact that they are immune by reason of a previous attack is certified to by a physician and provided that the person exposed to scarlet fever, and who is living in the same house with the patient, must have the clothing fumigated and change residence during the existence of the disease.

B. Children attending school and exposed to scarlet fever or measles, in a case of scarlet fever change their residence and fumigate their clothing, and are placed under daily inspection for a period of ten days. In measles they may attend school from the house in which the patient is, but must be under daily inspection.

St. Paul. Persons exposed to scarlet fever and measles and who are immune by reason of having had this disease are removed from the quarantined house after proper precautions. They are excluded from place of business when connected with the sale or handling of food or dairy products.

Washington. A. Persons residing in premises in which scarlet fever exists are prohibited, without a permit from the health officer so to do, from handling or selling of foodstuffs or dairy products so long as they continue to reside in the infected premises. This regulation practically excludes every person from engaging in the business referred, because of the very rare instances in which the health officer has issued permits in cases of this kind. This position of the health department is taken regardless of whether the person has or has not had scarlet fever. Persons who have been exposed to scarlet fever, and who do not reside in the infected premises are prohibited from engaging in the sale or handling of foodstuffs and dairy products for a period of seven days from date of last exposure, unless authorized by the health officer to do so. If they have previously had scarlet fever a permit is given them. Persons exposed to measles are not prevented from continuing their work.

B. In the case of scarlet fever, all children who reside in infected premises are excluded from school during the continuance of the case. If they have had scarlet fever they can return to school as soon as the disinfection has been completed, otherwise they are required to remain away seven days after completion of disinfection. Children who have been exposed but who do not reside in the infected premises are given certificates to continue at school on presenting satisfactory evidence to the health department of previously having had scarlet fever. If they have not had scarlet fever they are excluded for seven days from date of last exposure. In the case of measles, all schoolchildren residing in the infected premises are excluded from school for twenty-one days from the onset of the illness unless they can present evidence satisfactory to the health department of having previously had measles, in which event they are permitted to continue in attendance at school.

QUESTION 2.—What is your procedure regarding the termination of quarantine of diphtheria and the seeking of "carriers"?

ATLANTA. Quarantine for diphtheria is terminated either on a negative culture or by the physician in charge certifying that all clinical symptoms have been absent for a period of ten days. Carriers are not especially sought by the health department.

BALTIMORE. We determine quarantine after diphtheria when two negative cultures have been obtained from the patient and one negative culture from the other members of the household taken by our own officers. 'Carriers' in school are not sought for except when there is a sudden increase in the number of cases of diphtheria.

BOSTON. All cases of diphtheria are released after this department obtains two successive negative cultures from nose and throat. The last culture is to be taken by a physician from this department. If there is a history of previous sickness in the family or any history of sickness among schoolchildren said suspects are cultured. If positive and no clinical symptoms of diphtheria, said cultures are tested for virulence.

CHICAGO. Terminate diphtheria on two negative terminal cultures from patient and one from each contact. Contacts' cultures are made at time diagnostic culture is taken, if positive, and there is no clinical evidence, are required to remain in quarantine premises as "carriers." At schools carriers are frequently sought for, and if positive the carrier is quarantined at home until negative culture is obtained.

CINCINNATI. Quarantine for diphtheria continues for fourteen days after disinfection of the premises by the formaldehyd method. The doctor announces the recovery of his patient and sends a culture, if the culture is negative, the district physician visits the patient and takes another culture, if this is negative the premises are disinfected as stated above. If other members in the family have suspicious throats, cultures are made.

CLEVELAND. Quarantine diphtheria is terminated on the finding by the city laboratory of a double negative culture.

DETROIT. Children recovered from, or exposed to, diphtheria are allowed to return to school following two consecutive negative cultures. Quarantine of diphtheria is terminated either by two consecutive negative cultures or on the certificate of the physician after eight days that the patient has clinically recovered, and that he and all members of the family have been given an immunizing dose of antitoxin. Two negative cultures are required as aforesaid, before allowing the children to return to school. Carriers are sought by cultures when two cases appear in a schoolroom or other public place.

NEW ORLEANS. Quarantine terminates when two consecutive negative control cultures have been obtained after clinical recovery. First control only may be taken by physician in charge. Controls to be taken forty-eight hours apart. First control not to be taken until seven days elapse from notification of case by physician in charge, all subsequent controls to be taken by physician from health office. Contacts are cultured in our search for carriers.

NEW YORK CITY. Quarantine terminated by receipt of two successive negative cultures, taken not less than twenty-four hours apart. Other children in family are cultured.

NEW YORK STATE. We require the quarantine of diphtheria until two cultures taken twenty-four hours apart are reported negative for the presence of diphtheria bacilli. If these persist in the throat that is normal in appearance for five weeks, the carrier is released on condition that he be very careful about coughing and sneezing in the presence of little children, that cultures be taken at intervals of two weeks until the throat is clear and that the health officer will advise us if secondary cases ever occur. This rule has been in force since the middle of last August, and up to the present time we have not heard of secondary cases occurring. In a few special cases, we have permitted the carriers, who were schoolchildren, to return to school, and the health officer in each case reports that no secondary cases have appeared.

OMAHA. All cases kept under quarantine until two negative cultures are obtained on consecutive days.

PHILADELPHIA. At the expiration of two weeks the patient must be pronounced free of disease by the medical inspector. Two negative cultures must be obtained from throat and nose on consecutive days. In every schoolroom in which a case of diphtheria is detected and in every case in which diphtheria develops in a home all direct contacts are cultured. Positive cultures without clinical evidence, are excluded from school and placed in modified quarantine until the case is cleared up. Early last fall we started with a mild epidemic of diphtheria and we believe that these methods greatly assisted us in overcoming the threatening spread of the disease.

PITTSBURGH. Quarantine terminated by field medical inspector when two negative cultures from the nose and throat have been secured at intervals of forty-eight hours. Carriers are determined by school medical inspectors. When daily bulletin shows that there has been a clinical case of diphtheria in any particular room, the entire room is cultured. Children absent from school with sore throats are cultured before they are permitted to return.

PROVIDENCE. The minimum period of isolation in diphtheria is until two negative cultures have been obtained from the site of the disease secured at least twenty-four hours apart.

ST. LOUIS. All cases of diphtheria are terminated by the attending physician which termination is verified by this department by the securing of two negative cultures made on succeeding days. No systematic search for carriers is made outside of institutions, hospitals and homes.

ST. PAUL. Children are excluded from school for two weeks after having been exposed.

WASHINGTON. The quarantine in cases of diphtheria is terminated on one negative culture. While one negative culture is accepted from patients treated in their own home, which culture is usually only a throat culture, the department believes that two negative cultures are better, and in the cases treated in the isolation ward of Providence Hospital and coming under the supervision of the health department two negative cultures are required before discharging patients.

While there is nothing in the laws or regulations authorizing the health department to take cultures from persons exposed to diphtheria, an effort is made to obtain such cultures whenever the consent of the individual can be obtained. In quite a few instances "carriers" have been found and isolated in the same way as those having clinical symptoms of the disease. This department makes no distinction for purposes of isolation, between the "carrier" and the clinical case.

QUESTION 3.—Do you require a report from the municipal laboratory or do you accept the report of any laboratory regarding the presence of diphtheria germs?

ATLANTA. State or municipal laboratory analyses are accepted. We also put up placard on clinical diagnoses but ask for culture to confirm same.

BALTIMORE. From the municipal laboratory, except when the report comes in from the physician that it is positive

Providence See reply to Question 2

St Louis On the report of a case of diphtheria an estimated quarantine of fourteen days is set If the patient recovers and shows two negative cultures before fourteen days have elapsed the case is terminated, provided no other children are in the house If there are other children, the quarantine is held for the fourteen days

St Paul The case is terminated on two cultures, from nose and throat

Washington Quarantine for diphtheria is not terminated until one or more negative cultures are taken from a patient So long as the bacilli are found present, quarantine continues

SYNOPSIS OF 1915 QUESTIONNAIRE *

	Can Return to Work or Can Attend School																				Personal Views of Health Officials		Quarantine Period for Diphtheria	Terminal Cultures Required in Diphtheria					Carriers Sought For	Examination of Cultures Compulsory in Municipal Laboratory
	At Once				At Once After Change of Address				After Incubation Period of Disease and Removal to New Address				When Original Case Is Discharged from Quarantine				When Original Case Is Discharged from Quarantine and After Elapse of Incubation Period				Should Immune Schoolchildren Be Excluded If Quarantine Is Efficient?									
	Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles											
	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Scarlet Fever	Measles		Two Negative	One Negative	None	From Nose and Throat	Intervening Period		
Atlanta													X	X	X	X					No	No	None		X			0	No	Yes
Baltimore					X	X	X	X													Yes	Yes	None	X				0	No	Yes†
Boston			X	X									X	X†							No	No	None	X			X	24 hrs	Yes	Yes†
Chicago			X	X	X	X															Change address	No	None	X				24 hrs	Yes	No
Cincinnati													X	X	X	X					Change address	No	14 days after disinf	X				0	No	Yes
Cleveland			X	X					X	X											No	No	None	X			X	24 hrs	No	Yes
Detroit						X		X	X		X										Change address	No	8 days	X			X	24 hrs	Yes	Yes
New Orleans					X	X	X	X													No	No	7 days	X				48 hrs	Yes	Yes
New York		X		X	X		X														No	No	None	X			X	24 hrs	No	Yes
Omaha			X	X	X	X															Change address	No	None	X			X	24 hrs	No	Yes
Philadelphia										X		X	X		X						Change address	Change address	21 days	X			X	24 hrs	Yes	Yes
Pittsburgh									X§	30 days	X§	21 days									Yes provisionally	Yes provisionally	14 days	X			X	48 hrs	Yes	Yes
Providence									X	X	X	X									No opinion	No opinion	None	X			X	24 hrs	NA‖	No
St Louis					X	X	X	X													No	Yes	14 days	X				24 hrs	No	Yes
St Paul						X		X					X		X						Change address	Change address	None	X			X	0	Yes	Yes
Washington			X	X	X	X															Change address	No	None		X			0	Yes	No

* Procedure in different cities regarding persons exposed to scarlet fever and measles and who are immune by reason of having had either disease and who (*a*) are engaged in handling dairy or food products, or (*b*) attend school

§ Grocer, work after eight days. ‡ Dairymen † In part only ‖ No answer

Question 6—What is your personal opinion regarding the exclusion from school of persons who are immune by reason of recently having had either scarlet fever or measles, and who have either of these diseases in their home, the patient being practically and efficiently quarantined?

Atlanta Personally, I am opposed to excluding such children from school

Baltimore While admitting that there is a possibility for a person to have scarlet fever or measles the second time yet I consider that it is so infrequent that it does not increase the likelihood of the disease being spread, and if one is absolutely sure that the child has had measles or scarlet fever (and very seldom that a health officer can be so assured) and if the health officer can be well assured that the patient is practically and efficiently quarantined then I consider that there is no danger in allowing the well children to attend school However we have to deal with the public, which unfortunately is made up of such a variety of characters, and all are not trustworthy, so we find it necessary to make a rule applicable to all alike, viz, the exclusion of the children from school so long as they remain in the house where the sickness is, otherwise discontent is produced by A being allowed to do that which we will not allow B to do

Boston Children who are protected by a previous attack of scarlet fever and measles, if other members of the family are sick with these diseases, are readmitted to school if they can satisfy this department and comply with the regulations governing the admission of children to school

Chicago Measles immunes may go to school with safety to others from premises quarantined for this disease. Scarlet fever immunes should make a change of address, if permitted to attend school

Cincinnati I believe that our quarantine with reference to measles is a relic of the dark ages We should be governed by the researches of Anderson and Goldberg In scarlet fever, I believe we are doing the right thing in applying the quarantine to all children in the same family If those who have had an attack or others in the same family take shelter with friends or relatives and do not develop the disease I think that they should be permitted to return to school They must, however, maintain their residence at the new address until quarantine in the home is discontinued

Cleveland It is my opinion that there is no occasion for excluding from school persons who are immune by reason of recently having scarlet fever or measles, and who have either of these diseases in their homes, the patient being practically and efficiently quarantined

Detroit There seems very little danger of transmission of scarlet fever or measles by persons known to be immune if such persons are promptly removed from the quarantined premises

Practically speaking, physicians leave everything in our own hands

Boston All cases must be released by our own laboratory

Chicago Yes, for terminal cultures, unless the *official report* of a high-grade laboratory is submitted Our rule is to insist on a representative of this department taking the second terminal culture.

Cincinnati Examination for the presence of Klebs-Loeffler bacilli are made in a municipal laboratory and in the laboratory at the hospital for infectious diseases We are governed by the reports of these two laboratories

Cleveland Reports from municipal laboratory only are accepted regarding the presence of diphtheria germs

Detroit Report from municipal laboratory on release cultures is required Also all release cultures are taken by board of health nurses

New Orleans We require a report to be obtained from municipal bacteriologists in any case of diphtheria before a sanitary release of infected person or premises is effected

New York City Report from municipal laboratory required

New York State The director of our laboratory inspects and qualifies certain laboratories throughout the state whose reports on cultures can be accepted without question

Omaha Require report from municipal laboratory

Philadelphia All official acts of this bureau requiring laboratory examinations are based on the findings of the bureau laboratory In establishing a quarantine, however, we will place a case in isolation on the findings of any laboratory, but do not begin or end a quarantine except on the bureau laboratory diagnosis

Pittsburgh We require a report from the municipal laboratory

Providence We accept the result of bacteriologic examination from municipal, state and hospital laboratories I have accepted the result of private work which only very rarely is offered here, but can readily conceive that it might be necessary to make a different ruling

St Louis All bacteriologic reports must be from the municipal laboratory

St Paul Regarding the termination of quarantine of diphtheria and the seeking of "carriers", culture of exposed taken, absence of Klebs-Loeffler bacilli

Washington The health department prefers to examine cultures in its own laboratory and by its own bacteriologist It will, however, accept the report from a bacteriologist of recognized standing as such

Question 4—Do you terminate the case on one or two cultures and do you require cultures from nose or throat, or both?

Atlanta We terminate the case on one culture from throat

Baltimore The physician in attendance sends in one negative culture, then notifies us that a house is ready for fumigation, and then our throat inspector visits the premises and takes the culture of all persons, including the patient, thus making two negative cultures of the patient and one of each of the household The cultures from both the nose and throat are not done in routine practice. Ordinarily we are content with the cultures taken from the throat. One of our difficulties in taking the cultures from the nose in all cases is the very large percentage of contaminated cultures, which obstruct the possible presence of the diphtheria organism

Boston See answer to Question 2

Chicago Two cultures for patient and one for all intimate contacts Require cultures from both nose and throat.

Cincinnati Cases of diphtheria are dismissed from the hospital after three negative cultures, taken from both the nose and throat Cases treated in the home are considered well after two negative cultures have been taken, as described above

Cleveland Quarantine is raised only on the finding of two cultures on successive days taken from the nose and throat of patient

Detroit When the case is terminated on cultures, two consecutive negatives are required from both nose and throat

New Orleans Case is terminated after two negative cultures have been obtained Where clinical indications are present, both throat and nasal cultures are taken

New York City Two cultures, nose or throat, but should require from both

New York State The code requires that the patient should not be released until two negative cultures taken at least twenty-four hours apart have been obtained We have always ruled that it was necessary that a culture be taken from the nose and throat each time, and that the patient should not be released until on two successive days no cultures are reported positive

Omaha Cultures from both nose and throat, two cultures only

Philadelphia The patient is excluded from school at least three weeks, twenty-one days, if the symptoms have entirely disappeared and examination of the nose and throat on two successive days show no diphtheria germs, that is, negative cultures

Pittsburgh In terminating diphtheria our method is as follows The attending physician sends cultures to the municipal laboratory until such time as he may get a negative, after which our field medical inspector calls to see the patient, taking a culture of nose and throat, also, taking cultures of other members of the family until cultures prove negative If a schoolchild, he must again be cultured, before admission to school, by the school medical inspector

Providence For the release of diphtheria we require two negative cultures from throat and nose although the state board of health rule does not call for this I consider nose cultures of great importance

St Louis Two cultures from the throat in ordinary cases The same number from both the nose and throat when there is clinically a nose involvement

St Paul The report from our own laboratory is required

Washington Cases of diphtheria are ordinarly terminated on one negative culture from the throat In cases treated in the isolation ward of Providence Hospital and over which the health department has certain jurisdiction, two negative cultures are required before a patient is discharged Cultures are not required from nose and throat

Question 5—What period of quarantine, if any, do you have for diphtheria cases?

Atlanta No period of quarantine.

Baltimore No fixed period We frequently raise quarantine in less than ten days after the report of the case

Boston Until two negative cultures have been obtained See answer to Question 2

Chicago Until two negative cultures from nose and throat on successive days have been obtained from patient and a negative culture from the close contacts

Cincinnati As stated above, quarantine for diphtheria continues for a period of fourteen days after the completion of disinfection

Cleveland First cultures for release are taken immediately on the establishment of convalescence, that is, on the disappearance of constitutional symptoms

Detroit Minimum periods of quarantine for diphtheria is eight days

New Orleans No period See reply to Question 2.

New York City No fixed period

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Omaha Until we get two negative cultures

Philadelphia At least three weeks—twenty-one days

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QUESTION 6—What is your personal opinion regarding the exclusion from school of persons who are immune by reason of recently having had either scarlet fever or measles, and who have either of these diseases in their home, the patient being practically and efficiently quarantined?

SYNOPSIS OF 1915 QUESTIONNAIRE *

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	At Once				At Once After Change of Address				After Incubation Period of Disease and Removal to New Address				When Original Case Is Discharged from Quarantine				When Original Case Is Discharged from Quarantine and After Elapse of Incubation Period				Should Immune Schoolchildren Be Excluded If Quarantine Is Efficient?			Two Negative	One Negative	None	From Nose and Throat	Intervening Period		
	Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever		Measles		Scarlet Fever	Measles								
	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren	Food Handlers	Schoolchildren										
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Boston			X	X									X	X‡							No	No	None	X			X	24 hrs	Yes	Yes†
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Boston See answer to Question 2

Chicago Two cultures for patient and one for all intimate contacts Require cultures from both nose and throat.

Cincinnati Cases of diphtheria are dismissed from the hospital after three negative cultures, taken from both the nose and throat. Cases treated in the home are considered well after two negative cultures have been taken, as described above

Cleveland Quarantine is raised only on the finding of two cultures on successive days taken from the nose and throat of patient

Detroit When the case is terminated on cultures, two consecutive negatives are required from both nose and throat

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Question 5—What period of quarantine, if any, do you have for diphtheria cases?

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Boston Until two negative cultures have been obtained. See answer to Question 2

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New York State No period of quarantine for diphtheria.

Omaha Until we get two negative cultures

Philadelphia At least three weeks—twenty-one days

Pittsburgh Minimum period of quarantine fourteen days, or until released by a field medical inspector after one negative culture

SCARLET FEVER—CONTINUED

Former Procedure	Present Procedure
Minimum isolation period, thirty-five days	Thirty days
Desquamation must be complete	Not insisted on
Use of elevator permitted only on entering apartment	No elevator restrictions.
Disinfection by fumigation	Fumigation omitted Disinfection by cleaning or, when necessary by repapering and repainting at expense of owner Disinfection of all discharges and soiled materials and articles throughout progress of case
No renovation placard	Renovation placard posted until cleaning is performed
Persons selling milk discontinue work or change residence	All food handlers stop work or change residence

DIPHTHERIA

Former Procedure	Present Procedure
All pupils in family excluded from school	If case is satisfactorily isolated pupils (and teachers) who have been immunized and on whom "trial" cultures with negative result have been made may return at once to school If isolation is not satisfactory, pupils (and teachers) who have been immunized and in whose cases "trial' cultures with negative result have been made, on change of residence may return at once to school If not immunized, they can return to school only after lapse of seven days' interval and a change of residence and a 'trial" culture with negative result
Terminated on one negative culture.	Two negative cultures taken at an interval of not less than twenty-four hours preferably from both nose and throat.
Disinfection by fumigation	Fumigation omitted Disinfection by cleaning or when necessary by repapering and repainting at expense of owner Disinfection of all discharges and soiled materials and articles throughout progress of case.
Persons selling milk discontinue work or change residence	All food handlers stop work or change residence If case is isolated satisfactorily trial cultures negative and immunization performed they may return at once to work.
Renovation placard not used	Renovation placard posted until cleaning is performed

It is, indeed, a pleasure to state that this questionnaire was promptly and most satisfactorily answered by all

The opinions expressed by the different sanitarians endorsed the new procedures While the experience in New York City has not covered a sufficient length of time to be conclusive, it has, however been very extensive and so far has given general satisfaction

Attention, however, might be called to the ultraconservatism of some of the municipalities, the minimum isolation period for diphtheria in Detroit is established at eight days, in St Louis at 14 days, in Philadelphia "at least three weeks", and in Cincinnati the quarantine period continues for 14 days after termination of case and completion of disinfection

Some cities accept reports of diphtheria without laboratory confirmation, definite periods of quarantine are set in several of the cities, whereas the presence or absence of diphtheria bacilli should be the determining factor it is thought

The methods of handling "contacts" and "persons exposed," as well as the seeking and handling of "carriers" varies widely

In Pittsburgh, schoolchildren exposed to scarlet fever are excluded for thirty days, and a minimum period of quarantine of sixty days is established for the patient

A synopsis of the variations is very interesting from this comparative point of view

In the establishment of quarantine, the object is to keep the patient "in" and the public "out," without the imposition of unnecessary restraint At no time must it be considered in the nature of a blockade

In public health work no one plan will apply everywhere, and in no single method does success lie Fear and superstition for ages held masterful sway in the control of the infectious diseases, but today we are ruled and guided by the light of knowledge, and the laboratory should be the determining arbiter of both custom and practice

Sickness, by its mere presence, greatly disturbs and is an added expense to the home, when this sickness, in addition, brings to the home municipal control, it is not welcomed, as a rule, because the family feel that the numerous restrictions are not only burdensome but also unnecessary, and in this opinion they are not infrequently upheld by their family physician

While no one knows the best, safest and most economical method of prevention and control of infectious diseases, it is appreciated that the most desirable system will be that which is most free from unnecessary restrictions and at the same time is consistent with demonstrated methods and scientific knowledge

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Mattress Sale Control.—Labor Commissioner John Price Jackson of Pennsylvania during October, 1915, issued instructions to inspectors to enforce rigidly in factories, cleaning establishments, wholesale and retail stores, the provisions of the acts of legislature that place under the jurisdiction of the department of labor and industry the manufacture and renovation, sale or resale of all mattresses The sweeping character of the mattress act of 1913 and the enlargement of its scope by an amendment passed by the last legislature virtually prohibits the sale of any mattress that is not manufactured of approved material, thoroughly sterilized and disinfected and properly labeled A resale of a mattress that has been used by a person having any infectious or contagious disease is forbidden and a resale of any mattress that has not been sterilized or disinfected is unlawful The law declares a mattress to be any quilted pad mattress, mattress pad bunk quilt or cushion stuffed or filled with wool hair or other soft material, except feathers, to be used on a couch or other bed for sleeping or reclining purposes, and further declares that no material may be used in the manufacture of a mattress if it has been obtained from any other mattress used by a person suffering from a transmissible disease. Scraps of old or worn clothing carpets or other fabric of material known as "shoddy" are prohibited

BLOOD CRYOSCOPY AND BLOOD UREA

A COMPARATIVE STUDY OF RENAL FUNCTION *

MARTIN KROTOSZYNER, M D
AND
GEORGE W HARTMAN, M D
SAN FRANCISCO

Determination of renal function, as a routine preoperative measure, is undoubtedly responsible for the marvelous advance of renal surgery during the last two decades By this means (in order to mention only two salient points) the recognition and operative treatment of incipient renal lesions, and nephrectomy in the presence of a diseased second kidney became well established and comparatively safe procedures Owing, furthermore, to the important rôle played by the kidneys in systemic metabolism, the value of functional methods of examination as widening and intensifying the diagnostic and prognostic aspect of kidney affections became generally recognized The diagnosis, finally, of degenerative lesions of the kidneys due to chronic urinary stasis, particularly in connection with prostatic hypertrophy, is only feasible on the basis of a careful study of renal function, which justly is considered the most important factor in the rapid reduction of the mortality rate of prostatectomy

While thus determination of renal function now occupies an important place among clinical methods of investigation, there exists, nevertheless, a marked divergence of opinion with regard to the accuracy and diagnostic value of the various tests which, of late, have been devised in rapid succession

CRITERIA FOR PRACTICAL VALUE OF TESTS

The main object in determining total renal function, so far as the surgeon is concerned, lies in the satisfactory answer to the cardinal questions Does renal insufficiency exist preoperatively? If so, is it reparable? Is renal insufficiency likely to occur postoperatively? Information on these most important issues is sought by means of the various functional tests at our command, by measuring the quantity of substances which are either eliminated by the kidneys with the urine (tests of renal excretion), or which are retained in the blood as end-products of metabolism (tests of renal retention) Total renal secretory activity is measured either by determining the quantity of substances normally contained in urine (urea, diastase, etc), or by introducing extraneous substances into the circulation (dyes, phloridzin), while renal retention of end-products of metabolism is determined by physiochemical tests (blood cryoscopy blood urea, etc)

No single test so far has been devised which fulfils all requirements, and only a few of the many tests recommended for clinical use are practically at the disposal of the surgeon

A functional test, in order to become available for clinical purposes, must give quick and uniformly reliable results by a technic not so cumbersome, difficult time consuming as to be prohibitive to the busy cian

SIGNIFICANCE OF TESTS

Viewed from this standpoint, almost all of the tests, sed on excretion of substances normally contained in urine, have to be rejected, since the quantity of renal secretory activity is not determinable by the elimination of a single salt or enzyme, but by the excretion of substances which, being of intrinsic importance for metabolism, express the total sum of renal capacity Thus, quantitative estimations of the twenty-four-hour urea output, carried out for a series of days under hospital regimen, may give an approximate idea of total renal function, and are, for a certain class of cases, like prostatics with retention catheter, of practical value The amylase tests, on the other hand, dealing with a single ferment, must for the same reason be considered as of little practical value, a view which is substantiated by Rowntree and his collaborators,[1] who, on the basis of their comparative study with other tests, conclude that determination of diastatic activity often yields contradictory and unreliable results

The use, for functional purposes, of extraneous substances which physiologically are not present in the circulation is subject to the same criticism By this means, renal functional capacity is estimated by the ability of the kidneys to excrete a single dye or glucosid Renal excretory capacity, though, is variable according to the substance by which it is tested, or, in other words, the kidneys work selectively and eliminate one substance better than the other Thus it appears obvious that satisfactory permeability toward one dye cannot be considered as a uniformly correct index of the total sum of renal capacity This fact alone should, in spite of the obvious practical advantages of the phthalein two-hour bladder test (ease of application, rapidity of elimination, quantitative colorimetric estimation of excreted dye), militate against the widespread acceptance of that test as the only means for determining total renal function

More rational, therefore, because representing a general expression of total renal activity, are tests of retention, based on the quantitative determination of components of urine retained in the blood Of this class of tests determination of the freezing point of blood (cryoscopy) appears to be the most comprehensive and, therefore, the most important method, since total secretory renal capacity is measured by determining the degree of retention due to renal insufficiency This test has given us uniformly safe and reliable results substantiating the conclusions of our former publication on this subject[2]

BLOOD CRYOSCOPY

Our technic for blood cryoscopy has remained practically unchanged Through long practice we are enabled to keep the mixture of ice and salt at such concentration, as to insure a constant temperature of about — 4 C (24 8 F) during the entire course of the test Aspiration of the patient's blood with needle and pipet was lately adopted, as facilitating and shortening the time of blood taking The average length of time of actual determination for water or blood is, at present, reduced to about fifteen minutes for either test Bartley's[3] *modification of* cryoscopic technic, which we fully tested, was abandoned as neither simpler nor more time-saving than determination with the ordinary Beckmann apparatus

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* Read before the Section on Genito Urinary Diseases at the Sixty Sixth Annual Session of the American Medical Association, San Francisco, June, 1915

[1] Rowntree, L G Marshall, E K, Jr and Baetjer, W A Further Studies of Renal Function in Renal, Cardiorenal and Cardiac Diseases, Arch Int Med, April 1915, p 543

[2] Krotoszyner Martin and Hartman G W Practical Value of Blood Cryoscopy for the Determination of Renal Function, The Jour AL A M A, Jan 18, 1913 p 188.

[3] Bartley Arch Diagnosis July, 1913

Since our last report 106 cryoscopic tests were made on 84 patients

Of 66 patients with normal blood points, ascertained through 77 cryoscopies, 23 were operated on without death The average point of these 23 patients was 0 557

In 12 cases of incipient unilateral or bilateral kidney lesions of indefinite character (chronic nephritis, hydronephrosis, hematuria, etc), an average point of 0 553 was ascertained

The average point of 12 cryoscopies, done on 8 patients, with recovery following prostatectomy, was 0 561

Of 15 fatal cases, 10 nonoperative deaths showed an average blood point of 0 62, while the average blood point of 7 cryoscopies, done on 5 operative cases, was 0 581 The average freezing point of the 31 cryoscopies, made on this class of cases, was 0 604, in 18 instances the point was above 0 58 and in 21 above 0 57

Particularly important is the prognostic value of repeated cryoscopic examinations in functionally doubtful cases, which is best illustrated by two observations from our case records

A man of 53 with the clinical diagnosis of prostatic cancer showed, on admission to the hospital, a blood point of 0 585, which, under bladder drainage, gradually went down[4] to 0 553 Suprapubic prostatectomy was followed by satisfactory recovery without recurrence within one year and two months

In a man of 65 with the same clinical diagnosis the blood point increased from 0 574 to 0 580 Death occurred five days after prostatectomy with symptoms of renal insufficiency

In 13 determinations of 9 cases of chronic nephritis during the stage of cardiorenal compensation, normal freezing points with an average point of 0 564 were obtained Characteristic, too, for this class of cases is the prognostic value of the method, which is best evidenced by the recital of the following observation

A nephritic of 60 entered the hospital with severe cardiac asthma, general anasarca, etc His blood point of 0 573 fell under appropriate hospital regimen and with symptomatic improvement to 0 567, at the onset of uremic symptoms a point of 0 592 was ascertained, which rapidly rose to 0 620 prior to death in uremic coma

All cases of nephritis, in which uremic symptoms were manifest, showed points gradually approaching 0 60 and above The 5 patients in whom the blood point went above 0 60 died In uremic coma followed by death very high points up to 0 70 were obtained In two cases of deep uremic coma, tested shortly before death, the unusually high points of 0 790 and 0 826, respectively, were ascertained

With our added experience we can simply reiterate the statement made three years ago that blood cryoscopy, if performed with faultless technic and interpreted by a critical observer, is a valuable test for estimation of total renal function

BLOOD UREA

While quantitative determination of urea
was done systematically and with scien

by Strauss and others, methods used for that purpose were by far too complicated and technically difficult as to become available for clinical purposes A few years ago Denis and Folin[6] introduced a simplified method, the test, though, assumed practical importance only through a new procedure as devised by E K Marshall, Jr,[6] who utilizes the diastatic properties of urease, the enzyme of the soy bean, for the conversion of urea into ammonium carbonate, and finally into ammonia, which then is titrated against fiftieth normal hydrochloric acid

In our determinations of blood urea we followed substantially Marshall's method The technic of the test is comparatively simple, its greatest difficulty being the determination of the end-point of titration, in which accuracy is readily acquired with practice and experience The normal content of blood urea, according to several authorities (Widal, Folin, Geraghty and others), varies between 100 and 500 mg per liter, its upper limit being 500 mg, values above that are considered to be indicative of urea retention, due to renal insufficiency

We have made 43 blood urea determinations on 33 patients In order to establish a standard of normal values we started our work by examining a number of normal patients, without any anatomic or functional renal involvement Twelve such cases were tested and determinations were repeated in a number of these for purposes of control

The values of all determinations for this class of cases ranged between 120 and 468, with an average of 236, thus demonstrating uniformly normal points

In 5 cases of chronic nephritis without uremic symptoms, normal values, or an average point of 242, were obtained, while in 5 cases of uremic coma with death, abnormal points (542, 757, 936, 950 and 1,116), with an average of 860, were found

In 6 cases of prostatic hypertrophy with residual urine, five of which were successfully prostatectomized, normal points with an average of 311 were ascertained A prostatic with severe retention and marked urosepsis, who, on account of poor cryoscopic and phthalein values, was assigned to the interval operation, and who died shortly after preliminary suprapubic cystostomy, done under local anesthesia, showed, on two determinations, points of 486 and 301, respectively A patient with prostatic cancer, who died from renal insufficiency, a few days after partial prostatectomy, demonstrated points of 168 and 420

Five patients with unilateral or bilateral surgical kidney, one of whom died, showed normal values with an average of 231 In one of these cases, in which the necropsy revealed a bilateral pyelonephritis, values of 144 and 312 were obtained In another patient with bilateral hematogenous kidney infection (colon), who entered the hospital with marked uremic symptoms (nausea, vomiting, drowsiness, etc), and who rapidly improved under eliminative treatment, points of 396 and 226 were ascertained

A patient with mercuric chlorid poisoning, with final recovery, showed a point of 214

Our r the blood-urea test practically coin-
servers (Geraghty,
about 500 mg and
al function, and

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[4] For simplicity the lowering of freezing
designated as rise and vice versa

higher points, up to 1,000 mg and above, in cases of renal insufficiency

CRITICAL COMPARISON OF BOTH TESTS

A comparative study of the clinical importance of blood urea and blood cryoscopy must necessarily be based on the consideration of the significance of the two tests Blood urea estimates renal function by quantitative determination of retention in the blood of a single, though admittedly, the most important constituent of urine, in renal insufficiency the test indicates pathologic accumulation of end-products of nitrogen metabolism, and, therefore, does not so much register the degree, course and variability, as merely the final stage of disturbed function Blood cryoscopy, on the other hand, does not depend on retention of a single urinary constituent, but on the total sum of retained molecules, or, in other words, it measures renal secretory activity in its totality On account of the narrow margin of freezing points between normal and pathologic values, the rise or fall of renal functional capacity can be followed by repeated cryoscopy, and the test assumes, by this means, a prognostic significance which is of the utmost importance for surgical purposes, since on its findings indications for rational therapeutic measures may be based Blood urea, on the other hand, because simply demonstrating abnormalities of renal metabolism, to which the organism has been subjected in the past, and on account of its very broad range for normal values, is a less delicate index of variations in renal activity, and, therefore, lacks in prognostic finesse

Thus, in a patient with prostatic cancer, who died a few days after prostatectomy, freezing points gradually rising to 0 580 were found, while the corresponding blood urea points ranged between the normal figures of 165 and 420 In a comparative study of a fatal case, of similar type, in which gradual deterioration of renal function was ascertained by freezing points rising from 0 540 to 0 611, the corresponding blood urea points varied between 288 and 542, values which are considered to lie still within normal limits

In contrast to these findings, five patients with chronic nephritis, with death in uremic coma, showed for both tests high or pathologic points, thus giving parallel results

The greatest objection which has been made to blood cryoscopy is the limited range of normal freezing points, which lie within 0 02 of 1 degree C, and on account of which the slightest inaccuracy in technic may vitiate the result While this objection does not obtain with blood urea, because of its very broad range up to 550 mg, the drawbacks of the test, as pointed out above, are not offset by the technical difficulty of cryoscopy After a long practical experience with blood cryoscopy we must admit that its technic is exceedingly delicate, and that correct determination of the end-point is only feasible after long and continuous practice, since differences exceeding 0 005 of 1 degree C may considerably change interpretation of end-results During the course of the test a great many precautions must be continuously observed in the handling of the apparatus, thorough skill in which can only be acquired by constant application of an intelligent operator with laboratory training Everything in the performance of the test, therefore, depends on attention to detail, which, if neglected in the slightest, may entirely upset the end-result As soon, though, as these technical difficulties have been mastered, the results assume a surprisingly uniform aspect and the test becomes, in experienced hands, a finer and more exact index of renal function than any other method of determination of total renal function In determination of blood urea, on the other hand, the technic is rather gross and is easily learned and mastered, so that the average intern, after some experience, may obtain reliable results We can, nevertheless, only partly agree with Hinman's[7] statement, which designates blood urea as the simplest, most defienite and most practical of tests of retention It is certainly simpler, and therefore possibly more practical, but not more definite than cryoscopy, the technic of which is not so difficult as not to be within reach of every surgical assistant

The tests supplement each other, and a parallelism in the results of both intensifies the significance of findings We would, therefore, recommend, for doubtful cases, the performance of both tests as a routine measure

CONCLUSIONS

1 Blood cryoscopy and blood urea run parallel in cases with normal renal function

2 In renal insufficiency pathologic or high points are obtained with both tests

3 The limited range between normal and pathologic points, while rendering technic of cryoscopy more difficult, increases its delicacy and prognostic significance

4 Blood urea, while technically simpler, is, on account of the broad range of its normal and pathologic values, prognostically less precise

5 Simultaneous application of both tests intensifies, in doubtful cases, the significance of findings

999 Sutter Street — 1204 Sutter Street.

ABSTRACT OF DISCUSSION

Dr. Arthur B Cecil, Los Angeles I do not feel that a comparison can be drawn between the relative values of cryoscopy and blood-urea and methods of determining kidney efficiency by various dyestuffs These methods are not opposed to each other It is well understood that the kidneys have a great reserve power, and as long as that reserve power is not being exceeded, the patient will not clinically give signs of retention of products in the blood A comparison might be made with a patient suffering with a valvular lesion of the heart As long as he is at rest he seems perfectly well and does not show signs of broken compensation, but added strain exceeds the heart capacity for work Now in the cases of the kidney, so long as they are not being overworked cryoscopy and blood-urea will be normal, but if their efficiency is exceeded by a sudden strain there will be retention of the products in the blood I think the only logical thing is, in the first place, to determine by cryoscopy or blood urea, as to whether the patient has exceeded his kidney efficiency, but in the absence of retention it does not mean that a patient is a good surgical risk, for he may not have the ability to take on extra work forced on him by operation We must, therefore, determine how much the kidneys are worth from the reserve standpoint, and this is admirably determined by phenolsulphonephthalein The kidney efficiency may be greatly reduced and the patient may appear quite well, but with the added strain of operation his kidneys are unable to take on their added work. In other words, he has broken compensation of the kidneys

Dr. William E Stevens, San Francisco I think one of the most important lessons that the paper of Dr Krotoszy ner and Dr Hartman teaches us is the necessity of combining the tests of retention with those of excretion There seems to be a tendency among many at present to be careless in this respect They place their dependence on the phthalein test, which, as we all know, is most popular in this country at the present time, and they think that by this test we can learn everything there is to know about kidney function, whereas, it fails many times to teach us anything I have recently seen several cases in which the total phthalein output was 15 to 20 per cent, in one case even as low as 10 per cent. in two hours and many patients in cases of that kind are denied the benefit of a prostatectomy when it is badly needed The foregoing patient was operated on and recovered without complications of any kind in the usual length of time. If tests of retention had been made in these cases, without any doubt we would have found them normal I agree with Dr Krotoszyner and Dr Hartman that we should combine the tests in every case.

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[7] Hinman Surg, Gynec and Obst. 1914, xix, 482

Dr. Edgar G Ballenger, Atlanta, Ga There are several factors apart from the technic of making these tests that are important for us to bear in mind The quantity of water that a patient has been drinking before we make the test is one, and the amount of protein he has been consuming for the past few days is another He may have dammed back much material that could have been disposed of by diuretics and purgation We should consider whether or not he has been on a restricted diet, or whether he has had a fever that has burned up the material very rapidly

Dr. Frank Hinman, San Francisco I think this contribution of Dr Krotoszyner and Dr Hartman is a most valuable one. It is the first detailed comparative study, so far as I know, of cryoscopy and blood-urea

Dr Krotoszyner took an exception to a statement that I have made that blood-urea was the simplest and most valuable test of retention I think from his study I will have to modify that statement and not say it is the most valuable. I think, however, that there is a distinction between the two tests in this way cryoscopy undoubtedly will give a more definite prognosis, but cryoscopy will not give the information that blood-urea will give in regard to the form of retention.

The forms of retention are of three kinds, namely, nitrogen retention, retention of acids and retention of chlorids In the examination of the blood the estimation of retention of nitrogen is most important but, at the time of the blood-urea determination the acids can also be estimated A cryoscopy examination alone will not tell which form of retention is present, whether it is a retention of nitrogen, a retention of chlorids, or of acids, and knowledge as to what form of retention is present is most important in the treatment of cases Prognosis is better established by clinical studies than by functional studies anyway, although the two should be used in conjunction I think, however, that Dr Krotoszyner's conclusion is probably just that cryoscopy is a much better test than blood urea from a prognostic standpoint.

Dr. George W Hartman, San Francisco Of course there is no one test that will anticipate what is going to happen in case of possible shock. It would seem after following this work closely that if there is any possibility of prognosticating ordinary cases, cryoscopy does that to the best advantage.

There have been cases suggested in the paper, and also mentioned by Dr Stevens, in which the phthalein output was very low, others in which, on a standardized diet, urea was forbiddingly low Had we relied on either of these tests alone we certainly should not have operated. In the presence of normal cryoscopies we proceeded and the patients did very well. The application of cryoscopy seems to be best in those old cases in which one might expect to have bad renal function—I mean old prostatics In almost all of those patients the results have been unerring In only one operative case in the last five years in which the cryoscopy was minus 0 58, or below, did the patient die. There is an unerring accuracy in cryoscopy The normal values usually fall within certain limits, and we have made determinations on cases known to be normal time and again, the results always agreeing It is surprising how one can do cryoscopies on the same patient at intervals of a week and find that the result will come within three one-thousandths of one degree

In regard to the technic, if one does not get satisfactory results after one or two attempts one should not abandon it It is a delicate test, because it deals with a thermometer that registers thousandths of a degree. In the course of time one acquires requisite ability It requires nothing but practice

I resent gently any suggestion that an attempt was being made to shove the diagnosis of these cases on to the laboratory I am not a laboratory man primarily, by any means I think our cases are studied as carefully clinically as they are ever studied from a laboratory standpoint. We make our diagnosis before we attempt this work. I think if you want to draw an age line, you might say that it is not necessary to do blood cryoscopy in patients under 50 years When you get an individual past 50 it is extremely valuable, especially as regards prognosis Some patients come in, especially old prostatics, who deserve to be operated on, and I am quite sure that if they were operated merely on a clinical diagnosis, they would not do well We have put them to bed put them in good shape, and then they have been operated on and recovered

Dr. W F Braasch, Rochester, Minn It is with some hesitation that I speak on this subject, because I have not had much experience with cryoscopy I have had some experience with blood-urea in the estimation of renal function, and also with phthalein Our experience on the whole has not been in keeping with the trend of recent literature concerning the value of functional tests So far as an aid to prognosis is concerned, after all is said and done, clinical judgment and experience, based on surgically fundamental principles, is the best guide as to whether or not to operate There is no laboratory functional test of the kidney which will tell whether or not to operate in the face of clinical symptoms That we have been correct in our principles has been proved by the comparative operative results in a large series of cases That does not mean that we pay no attention to the renal functional capacity We do so, however, by clinical means It is generally recognized that in the presence of residual urine prostatectomy should not be done without preliminary drainage of the bladder Immediately following drainage the patient loses in weight and strength and there will be an abundance of clinical evidence to show that the patient is undergoing a period of renal insufficiency The percentage of phthalein output will decrease and that of the retention tests will increase. This evidence, however, will seldom be present without the more apparent clinical evidence, and is unnecessary When the patient overcomes the stage of functional depression, his weight and strength return, his appetite improves and it is usually quite apparent that his general condition will warrant operation Whether or not the phthalein test remains low, or whether the urea test remains high, would not contraindicate an operation. While we should not disregard these various tests entirely, clinical experience has shown that they are only of secondary value in molding our clinical and surgical judgment

Dr. Fred R. Charlton, Indianapolis I am moved by Dr Braasch's remarks Some years ago one of our best authorities on urinalysis laid great stress on epithelium coming from the ascending loop of Henle or the descending loop of Henle and endless discussion grew out of such studies As a matter of present day fact it did not make one bit of difference which loop of Henle the debris came from. It was in a way a scientific study, but it had no value prognostically and little otherwise even if the claims of differentiation had been true, which they probably were not About that time Dr Richard Cabot, of Boston, came out with the statement that he would rather depend on the total amount of urine passed in twenty-four hours, plus its gross appearance, and its chemical reaction, than on all the fine spun urinalyses that were being made. That publication came to many as quite a shock, but none the less I know that it did me a great deal of good, and I believe that it brought us back to a normal appreciation of what our business has to do with I could not go into a physical laboratory and carry on the many studies that are now being carried on with great credit, and it is not my idea to take away one word of credit from the men who are doing this sort of work. However, it is a very easy thing to hold a nickel in front of your eye and blot out the sun You are so wrought up with your enthusiasm that you forget everything else. I took up the kidney functional test somewhat tardily, after others had already published their series of cases Since then it has seemed to me that in so far as the phthalein test was concerned, it prognostically made very little difference, and those with low phthalein that I operated on, because they seemed otherwise suitable cases and because they needed it, went on and recovered regardless of the phthalein findings I have had two cases with a high phthalein output, one with forty-five and one with fifty, and they both died from an unassignable cause, other than renal insufficiency While I believe that these pure laboratory studies are of tremendous value and that the men who are doing them should receive our heartiest appreciation, I do not believe I would hesitate because of a low phthalein output to operate where my clinical judgment said it was necessary We have no right to disregard all our earlier clinical values whenever the latest laboratory claim is set up

Dr. Louis E Schmidt, Chicago I would like to say that I agree with every word said by the two previous speakers, particularly Dr Braasch, who went into details scarcely necessary for me to repeat, but there is no question that all of these methods of examination are completely secondary I do not believe there is any general or genitourinary surgeon who will refuse to operate on a patient if any one of these methods of examination should not bear out one or another theory

In regard to cryoscopy, it is simply a routine method of examination It is certainly fascinating, equally so as the phthalein test I hardly think a day passes that I do not do more than one The reason I mention that is this It is not a method involving any great amount of work I think it is a method that can be carried out just as quickly and as easily as any other If anyone is interested in keeping up with work of this kind I think it is well worth while to make as many of these tests as possible, because in the future certain conclusions may be derived from these various findings

Dr A J Crowell, Charlotte, N C The discussion brings out a fact that I tried to emphasize in my paper, that every available means at our command should be used in arriving at a diagnosis and ascertaining the best surgical procedure to pursue, and when to operate, but we must not depend on any one of them I, like Dr Braasch, think we should throw great stress on the clinical symptoms, yet I do not believe that any one of the means or aids at our command should be excluded in arriving, not only at our diagnosis, but in assisting us in deciding when to operate and what to do

Dr Granville MacGowan, Los Angeles The condition of men who require prostatectomy, and the condition of the many people who have obstructive lesions in the anterior or posterior urethra, are very lamentable It requires often a great deal of judgment to care for and preserve their lives They will all die if you do not operate on them and many of them will die if you do, or do too much at one time Much of your judgment must depend necessarily on the results of investigations which you make of the ability of the kidneys to keep the man alive All people with chronic obstruction of the posterior urethra are already poi- ...ned They are to a certain extent immune to their infec- only ...rganisms, but they are not immune to an extra accumu- gent of urea in the blood the pe...rgeon who sees further than the local conditions will attenti...much of value in the formation of his judgment If may emply tests the kidneys to find out how large a per- of phthalein or of indigocarmin will pass through in a certain time, and bases operative interference on that alone, he will be chagrined to lose some patients in whom the output of phthalein is high, and, on the contrary, he will be astonished sometimes where there is a low output of phthalein to see an undisturbed convalescence If the patient is drained preliminarily and the color tests applied, then the blood-urea tests, and if the surgeon possesses the technical skill, cryoscopy, material is gathered which when added to one's clinical knowledge and experience of general diseases, enables one to determine exactly what the clinical status of the individual is Thus and thus only the operator will do the best for himself and also do the best for his patient, for he has neglected nothing bearing on the case, thereby becoming a successful operator, and the patient will recover from the troubles for which he seeks operation

Probably the wisest genito-urinary specialist who ever lived was Albaran In perfecting his judgment as to operative interference he depended almost entirely on the ability of the kidneys to secrete water under force, and on the output of urea in the urine under such forced output. This is something that you must not overlook Practically we depend on the water output, on the estimation of urea in the urine, on the ability of the kidneys to put out phthalein and on the clinical appearance of the patient. I regard them all as necessary, and I look with favor on the usefulness of cryoscopy

Dr. Martin Krotoszyner, San Francisco I beg to take exception to Dr Hinman's statement, that he considers blood-urea estimation preferable to cryoscopy as a guide to rational treatment. From my experience with blood-urea, although it is not as extensive as that with cryoscopy, I am, on the contrary, fairly well convinced of its superiority for therapeutic purposes I agree with Dr Stevens that too much stress is laid, especially in this country, on the exclusive use of phthalein, and also with Dr Braasch, who warns against overestimating the evidence furnished by any or all laboratory tests It is, for instance, a fact that by the exclusive use of the phthalein test, as it is at present done dogmatically in every clinical case of surgical kidney, some cases may be robbed of the benefit of a life-saving operation The value of functional tests is not exhibited in clinically clear cases, which as a rule, can be sent to the operating room after a brief and more perfunctory functional study However, the great value of determining kidney function becomes apparent in the clinically doubtful cases and particularly in those in which the prognosis is dubious For these purposes we have found cryoscopy to be a valuable guide as indicating the reserve capacity of the kidneys There, in reality, lies the most important aid that we can expect from any functional test, and since cryoscopy has apparently given the best results in this respect, we have, in spite of its technical difficulties, tenaciously clung to it and shall continue to do so in the future, unless we become convinced that equally good results are obtainable by another procedure

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Cancer Statistics—On the Continent of America we also see a corresponding increase in the death rate from cancer In New York the death rate from malignant disease in 1913 was 82 per hundred thousand of the total population, whereas for the previous five years the average was 79, in Boston it was 118, as compared with an average for the previous five years of 110, in Pittsburgh, 79 per hundred thousand, as compared with 70 for the previous five years, in Baltimore 105 as compared with 94 for the previous five years, in Chicago, 86, as compared with 81 for the previous five years, in Philadelphia, 95, as compared with 88 for the previous five years, and in St Louis, 95 per hundred thousand, as compared with an average of 85 for the previous five years The mortality statistics for the whole of the United States give in 1900 a death rate from cancer of 63 per hundred thousand of the total population, in 1904, of 70.2, in 1909, of 73.8, and in 1912, of 77 per hundred thousand—W H B Aikens, *Practitioner*

TRAUMATIC SEPARATION OF THE NERVE ROOTS FROM THE SPINAL CORD

REPORT OF A CASE

WILLIAMS B CADWALADER, M D
Instructor of Neurology and Neuropathology University of Pennsylvania, School of Medicine Clinical Assistant Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases
PHILADELPHIA

The tearing away of the nerve roots from the spinal cord is, fortunately, a somewhat uncommon accident When it does occur, however, the diagnosis should be made without much difficulty In spite of the ease with which the diagnosis is made, the condition is often overlooked In only a few instances has the diagnosis been verified at operation or at necropsy Mills[1] reported a case in which operation had been done, and later Frazier and Skillern[2] also published a report of the same case Of the twenty-three cases found by Frazier and Skillern in the literature on the subject, only one afforded an opportunity to determine at necropsy the extent of the damage done to the nerve trunks

F F., man aged 36, was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases May 28 1912 He gave the following history In 1907 he had fallen between some machinery, and his left shoulder and left arm had been severely wrenched Any further details could not be elicited Immediately after his accident the whole left upper extremity became paralyzed, and severe neuralgia set in and has continued ever since.

When examined, his left arm was found to be powerless and hung at his side. All the muscles of the left hand and forearm were totally paralyzed, as were also the serratus magnus, biceps, triceps and brachialis anticus The deltoid and latissimus dorsi muscles retained considerable power, although they were weaker than the muscles of the opposite side. The rhomboids and the upper part of the trapezius contracted well Movements of the left pectoral muscle were abolished

The reaction of degeneration was found to be present in all the muscles of the hand and forearms, and the biceps, pectoralis major and triceps The supraspinatus and infraspinatus and the latissimus dorsi and deltoid did respond to the faradic current, but not so readily as on the sound side The rhomboids reacted normally

The result of the ocular examination made by Dr Langdon was as follows The left palpebral fissure was narrower than the right, and the left eyeball seemed to be slightly contracted The left fissure measured 9 mm, the right, 8 mm The pupils were unequal in size, the right one measuring 3 mm., and the left one being slightly smaller Both pupils reacted promptly to light, and accommodation was normal Two drops of a 4 per cent. solution of cocain caused the left pupil to dilate 6 mm, but the same amount instilled into the right eye caused the pupil to dilate only 4 mm Two drops of a solution of homatropin hydrobromid, 8 grains to the ounce, dilated the pupils equally, each measuring 6 mm Measurements taken with the exophthalmometer showed that the left eyeball protruded 16 mm and the right 17 mm. The optic disks were normal Vision. O D, 5/10, O S, 5/6 The extra-ocular muscles were entirely normal

Cutaneous sensation was completely abolished below the point corresponding to the insertion of the tendon of the deltoid on the outer side of the arm Sensations of deep pressure were lost The ability to recognize movements of the fingers, wrist, and elbowjoint was totally destroyed The hand was swollen and cold and a purplish-red

The patient complained bitterly of deep-seated boring and gnawing pain, which seemed to be localized to the palm of the hand and wrist There was no tenderness, and movement or manipulation of the arm did not influence the pain The patient described the pain as being constant and deep-seated, sometimes extending up to the elbow, and varying slightly in intensity from time to time

An operation was decided on for the purpose of exploring the region of the brachial plexus

June 10, 1912, Dr William J Taylor exposed the main trunks of the brachial plexus in the neck, just above the clavicle On being exposed, the middle and lower trunks appeared to be involved in fibrous tissue A small portion of the inferior trunk was resected, the adhesions were broken up, and the ends were reunited by suture.

After the patient had recovered from the operation, he was examined for further changes of sensation and motion The same results were secured as before the operation resection of the nerve trunk did not produce any additional anesthesia or motor paralysis, but the neuralgia did abate considerably—in fact it almost disappeared for two weeks, after which it gradually returned and was just as severe as before operation

After the resected portion of the nerve had been stained with hemalum and fuchsin, and by the Van Gieson and Wiegert methods it was examined microscopically The entire cross-section of the nerve trunk was found to be degenerated not a single normal axis cylinder could be recognized and there was marked proliferation of the endoneural connective tissue

The neuralgia did not improve, and the patient continued to complain so much of the uselessness of his left arm that in August, 1912 it was amputated 4 inches above the elbow The stump healed by first intention

The nerves of the amputated forearm were dissected out and examined microscopically The ulna, radial, median and musclo-spiral nerves did not appear to contain a single normal axis cylinder, and there was pronounced overgrowth of fibrous tissue Degeneration was complete The degenerative process in these nerves was exactly similar to that found in the resected portion of the inferior trunk No difference was found in sections taken from any part of these nerves, the peripheral and the proximal portions presenting the same appearance

The patient was again examined for sensation, and it was found that the upper limits were the same as before operation The neuralgia seemed to subside somewhat for a few days, only to recur with equal intensity After the amputation the patient insisted that he still felt the presence of the left hand and fingers, and that the pain seemed in the palm of that hand just as it was before operation It felt, he said, as if the left thumb was tightly flexed and was boring into the palm of the hand. When asked to place his right index finger on the spot where the pain was felt, he indicated the inner side of the stump of the left arm The pain was well localized and always located at the same point on the stump Before amputation there was no contracture of the thumb and fingers of the hand, and they could be freely moved by the examiner, but not by the patient.

The profound motor paralysis and the complete anesthesia, together with the sympathetic paralysis of the eye on the afflicted side, would seem to indicate that the lesion must have been situated proximal to that point at which the posterior thoracic nerve is derived from the fifth, sixth and seventh anterior cervical roots, for the serratus magnus muscle was paralyzed, furthermore, the lesion must have been proximal to the point at which the sympathetic fibers arise from the eighth cervical and first thoracic roots The deltoid was affected, but a portion of its function was still preserved, all the remaining muscles of the upper extremity, however, were paralyzed The area of anesthesia conformed to the distribution of the fifth, sixth, seventh and eighth cervical and the first dorsal roots

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[1] Mills Pennsylvania Med Jour August 1911

[2] Frazier C H and Skillern P G Supraclavicular Subcutaneous Lesions of the Brachial Plexus Not Associated with Skeletal Injuries The Journal A M A Dec 16 1911, p 1957

It seems evident, therefore, that at the time of the accident the anterior and posterior roots, from which the brachial plexus is derived, had been torn away from the spinal cord As the deltoid and the rhomboids were not totally paralyzed and the cutaneous sensation was only partially destroyed in the area supplied by the fifth cervical posterior root, it is probable that neither the anterior fifth cervical root nor the posterior fifth cervical root was completely ruptured Conductivity through these roots, though imperfect, may still have been retained

This case furnishes additional proof of the accuracy of the present-day teaching that when an anterior spinal nerve root is cut, all the fibers below the point of section die The distal portion of the root degenerates completely When the posterior root is cut, all the fibers proximal to its ganglion and between the point of section and the spinal cord die, whereas all the fibers between the divided portion and the ganglion still live Nevertheless, having been separated from the cord itself, sensations can no longer be conveyed to the brain It is obvious, therefore, that so long as pain persists, this communication cannot be entirely destroyed, in this case probably portions of one or two posterior roots were not entirely ruptured

In cases such as that just described, the treatment ust be directed merely toward relieving pain This can be accomplished only by complete section of the intraspinal sensory roots already injured, but still capable of conducting painful sensations Alcoholic injections into the peripheral nerve trunks would have had no effect, since degeneration had already taken place

1710 Locust Street

A PLEA FOR CHOLECYSTECTOMY

JOHN W LANE, MD
Fellow of the American College of Surgeons, Surgeon in Chief,
St. Elizabeth's Hospital
BOSTON

Ochsner,[1] in his "New Manual of Surgery," states "Cholecystotomy is the operation of choice for removal of stones from the gallbladder" Experiences in the past year convince me that cholecystectomy is the operation of election for cholelithiasis In 1887 the first excision of the gallbladder was performed by Langenbuch for carcinoma Since that time the operation has been performed by ever increasing numbers of surgeons The presentation of a plea for its even more frequent performance is the object of this paper

In approaching the subject a brief review of the facts known about the gallbladder is of value The gallbladder, with the liver and pancreas, develops from that part of the fore intestine which later becomes the duodenum The bile duct and the pancreatic duct drain conjointly into the duodenum at the ampulla of Vater, hence the gallbladder, pancreas and duodenum are anatomically closely related The bile and pancreatic juice are great factors in the complicated process of digestion, and stimulation of the splanchnic nerves will inhibit the flow of each Each of these organs, having a common origin, is possessed of the same nerve supply

The function of the gallbladder is, as yet, not completely known The physiologists maintain that its main object is the storing of the bile until needed for digestion J B Murphy thinks its action is similar to that of the secondary bulb in a bellows, that is, to maintain a steady, even pressure This theory is ingenious At operation, however, the gallbladder is not always found in a state of tension, not infrequently it is seen almost collapsed The maintenance of secondary bulb action is not absolutely necessary to the individual, as patients from whom the gallbladder has been removed can testify

The mucous membrane of the gallbladder secretes a clear fluid, which is undoubtedly of some use to the human organism, but this fluid is not a vital necessity to an individual Mayo[2] has suggested that the organ, like the appendix, is an "obsolescent" stage of human embryology This sounds reasonable

The pathology of gallbladder disease has been clearly set forth by MacCarty[3] and reference to his article is desirable Given a pathologic gallbladder, what should be the choice of operative procedure? Convincing arguments lead to the adoption of cholecystectomy as the ideal procedure, and the relegation of cholecystostomy to a position as an operation of necessity — just as drainage of an appendix abscess without appendectomy is necessary at times, but not ideal There are certain conditions associated with pathologic gallbladder in which cholecystectomy is contraindicated In acute and chronic pancreatitis of an advanced type biliary drainage is of distinct advantage, and cholecystectomy out of the question

In cases in which there is an insurmountable obstruction of the common duct it is self-evident that cholecystectomy would be a fatal procedure The objectors to cholecystectomy do not, in my opinion, present a very strong case They state that the gallbladder is a necessary part of the body and therefore should not be removed Moynihan[4] answers this argument succinctly "The gallbladder is devoid of any strikingly useful purpose"

A very important statement by the advocates of cholecystotomy is that cholecystectomy is more dangerous Crile[5] says

> in cases of acute cholecystitis, with protective adhesions, in which the cystic duct is obstructed, cholecystectomy will give a higher mortality than will mere drainage of the gallbladder, for the reason that during the excision of the viscus, even with the most careful technic, it is necessary to traumatise the surrounding tissue to such an extent that the local immunity of the tissues is impaired In such cases it is probably wiser to merely drain the gallbladder, interfering with the local tissues as little as possible Later, if necessary, the gallbladder may be excised

It has been my experience that even in such cases cholecystectomy is safer I have never yet been able to find a trochar which did not leak around its puncture site, and have always felt that the danger of peritonitis from cholecystotomy was greater than from cholecystectomy It is not possible to do a cholecystotomy without soiling the field to a greater or less extent Moynihan states, following the previously given quotation from him " and its (the gallbladder) removal does not add appreciably to the danger of the operation"

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[1] Ochsner New Manual of Surgery, Ed 4, Chicago, Cleveland Press, 1915, p 517

[2] Mayo, W J, and Mayo, C H Keen's Surgery, iii, 991

[3] MacCarty Collected Papers, St Mary s Hospital, 1910, p 181

[4] Moynihan Abdominal Operations Ed 3, Philadelphia W B Saunders Company, 1914, *ii 289*

[5] Crile Surg Gynec and Obst, 1914, xviii, 430

In defense of cholecystostomy the statement is made that true reformation of gallstones is rare[6] I believe this to be true Recurrence of symptoms is, however, not rare Finney[7] writes

> When we add to the mortality of secondary operations performed after cholecystostomy, the number of which is undoubtedly greater than after cholecystectomy, there is probably little to choose from in respect of the mortality rate between the two There is always an appreciable percentage of recurrences of gallstones after cholecystostomy, probably less than 1 per cent But many overlook, of course doing an operation in which the gallbladder is not responsible for symptoms

It is urged against cholecystectomy that conditions may arise in the upper quadrant when the need of drainage is urgent, but impossible, on account of the earlier removal of the gallbladder This is so rare that it can be disregarded It would probably be more apt to occur if the gallbladder were left behind, as this organ, in my opinion, is the cause of many of the troubles in the epigastric region

Cholecystectomy has many advantages over cholecystostomy Primarily, cholecystectomy, in cases of cholecystitis, with or without gallstones, removes from the body the natural habitat of gallstones, the place where the majority of said stones foregather, hence, it takes away the main chance of recurrence and gives the most likelihood of permanent cure

The most striking advantage of cholecystectomy and the obvious one to the operator is the immediate convalescence The patient on whom a cholecystostomy has been performed goes back to bed with rubber tubing ¼ inch to 1 inch in diameter and 2 or 3 feet long emerging from his belly This is attached to a drainage bottle and pinned, to prevent its pulling out of the gallbladder, to the sheeting For from seven to fourteen days, and perhaps longer, in some cases, this tubing remains, constantly tugging and pulling on the tender wound, causing untold agonies After removal of the drainage tube the abdominal wall is bathed in biliary discharge, dirty and sticky, if not irritating — on the whole a rather miserable existence for a person of fine sensibility

Contrast that picture with that of the immediate convalescence in cholecystectomy

The abdominal wound can be closed without drainage or at most a small cigaret drain for forty-eight hours This makes the convalescence immeasurably more comfortable and also shortens it greatly

Some months ago I made a cholecystostomy for cholelithiasis Ten days later, two cholecystectomies were performed for similar conditions, and both these patients left the hospital over two weeks before the cholecystostomy patient

A young woman on whom a simultaneous appendectomy and cholecystectomy were done was out of bed on the fifth day and left the hospital on the seventh day, feeling very well, with the wound entirely healed It is impossible to get any such result from a cholecystostomy Hence, cholecystectomy has an economic advantage in lessening the stay of the patient in the hospital

The higher mortality for cholecystectomy quoted by the majority of writers is due not to the operation per se but to the delay in reaching operative interference

Deaths from appendicitis are due to delay, not to the operation performed, be it excision or drainage This is the case with cholecystitis

The public should be educated concerning diseases of the gallbladder, as it has about appendicitis, and there is no doubt that it will respond as quickly

The series of cholecystectomies on which I base this paper number seventy-seven In these there have been but two deaths One death occurred in a case in which the gallbladder had spontaneously anastomosed with the duodenum, and, after closing the opening in the doudenum and removing the gallbladder, I found carcinoma obstructing the common duct This death was due to bad judgment, not to the cholecystectomy per se

The second death occurred in a case of cholelithiasis, in which the patient went to the operating table without the proper previous medical examination No operation of any kind would have been performed if the status of kidney and heart had been known previous to operation Cooperation between medical and surgical science in hospitals is absolutely necessary to good operative results

In two of the cases, in addition to the cholecystectomy, both an appendectomy and a gastro-enterostomy were done at the same time

VIABILITY OF BACILLUS TYPHOSUS IN ICE CREAM *

O W H MITCHELL, M.D
SYRACUSE, N Y

The use of various frozen foods and confections in which milk and milk products serve as a basis or constituent has become so great as to demand serious attention from sanitarians The persistence of the typhoid bacillus in milk and milk products is well known, and many cases and epidemics are recorded which have been transmitted by this food It is also known that *Bacillus typhosus* is not a normal inhabitant of milk In only one instance,[1] and this is not accepted by some bacteriologists, has *Bacillus typhosus* been demonstrated in the flesh and organs of the cow Through polluted water, from the hands or person of convalescents or carriers, or in some similar way the bacillus gains entrance into milk In other words, *Bacillus typhosus* in milk and milk products comes from human sources It is for these reasons that the milk products which are handled the most are the most liable to contain the micro-organism

Ice cream is a complex mixture, the number of ingredients being variable Because of the liability of contamination, great care should be used in its preparation That great care is not always exercised was shown by Wiley[2] in 1906-1907, who found that in the city of Washington of a number of places manufacturing ice cream three were clean, nineteen were dirty, sixteen were fair and nine filthy Wherever investigations have been made in places where regulations or their enforcement were lax, conditions have not been found highly satisfactory

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[6] Stanton E MacD Ann Surg February 1915

[7] Finney Canada Lancet 1913 1914 xlvii 892

* From the Department of Preventive Medicine and Hygiene Harvard Medical School

[1] Levy and Jacobstahl Arch f Hyg 1902 xliv Hirschbruch and Marggraf Arb a d k Gsndhtsamte 1913 xliii 623

[2] Wiley Washington Med Ann 1908 1909 viii 61

The bacterial count of ice cream is usually high, but is much lower with cleanly prepared products The presence of such a large number of bacteria complicates experimental study Bahlman[3] found that other substances besides milk, particularly gelatin, frequently contain a large number of bacteria, but because of the amounts used, that milk and cream are the main sources of bacteria

The impossibility of excluding other probable sources of infection makes epidemiologic studies of supposed ice cream epidemics unsatisfactory There are five instances in the literature in which ice cream is mentioned as acting, or possibly acting, as a conveyor of typhoid fever Turner,[4] in 1892, reported an epidemic of typhoid fever which to his mind was transmitted through ice cream This outbreak occurred in the Sanitary Districts of Greenwich and Rotherhithe, England An extensive investigation was made by Turner and other health officers with the result that they believed nothing but ice cream sold by Italian venders was responsible for the epidemic Several of the Italians had typhoid fever in their families, one dealer had two cases which occurred just before the epidemic

Munro[5] studied an epidemic of 800 cases of typhoid fever which occurred in Mid-Renfrewshire, England, in 1893 The water supply was found polluted, but it was thought that eighty-six of the cases were traceable to ice cream

Hope,[6] in 1898, investigated an epidemic of nineteen cases of typhoid fever which occurred in the suburban district of Knotty Ash, near Liverpool, England With the exception of temporary closets, which were used while the drainage system of the school was being repaired, and a foul brook nearby, no possible source of infection was noted until the evidence pointing to ice cream sold by an Italian vender at a fair was obtained All the sick were schoolchildren, and all of them had been to the fair Hope states that the water and milk supplies could be excluded

Behla[7] reported an epidemic caused by whipped cream and ice cream

Rosenau[8] makes the following mention of ice cream "Freezing kills only a certain percentage of typhoid bacilli In Washington several cases of the disease were traced to ice cream"

The epidemiologic studies are not numerous or extensive enough to be very valuable Some of them are highly suggestive, but the evidence cannot be considered as certain proof of ice cream transmission

EXPERIMENTAL DATA

In order to study the viability of *Bacillus typhosus* in ice cream, six mixtures were frozen *Bacillus typhosus* [illegible] incorporated in the preparations Samples [illegible] were removed from each and plac[illegible] glass containers, and these were [illegible] ice mixture The temperature [illegible] ments varied from 3 to 4 below zer[illegible] the duodenum drain conjoin

Ex[illegible] was made according to a formula of ice cream [illegible] in Fan[illegible] M. [illegible]armer's cook bo[illegible] One-half teaspoonful of flou[illegible] one-half cup of sugar were [illegible] a few grains of salt and o[illegible] mixed, and to this were added half an egg, slightly beaten, and 1 cup of scalded milk The mixture was then cooked in a double boiler for twenty minutes When cool, 1 pint of thin cream and 1 tablespoonful of vanilla were added The mixture was then frozen The number of typhoid bacilli added was 70,000 to each cubic centimeter of ice cream Samples were removed twenty-four hours after inoculation and plated on Endo's medium and plain agar Many typical typhoid colonies were present on the Endo plate Subsequent culture and agglutination proved the bacteria to be typhoid bacilli The total bacterial count was 450 000 per cubic centimeter After four or five days the ice cream became separated into a watery and a cream layer This separation occurred after each examination when the preparation was well stirred and the different layers thoroughly mixed *B typhosus* was recovered for the last time on the twelfth day after inoculation No attempt was made to study the percentage of *B typhosus*, but it was easily noted that a gradual decrease took place At the time of the last isolation, the total bacterial count was 900,000

Experiment 2—Ice cream made with 1 pint of thin cream, one-half cup of sugar and 1 tablespoonful of vanilla was treated similarly to the ice cream in Experiment 1 To each cubic centimeter of the ice cream 70,000 typhoid bacilli were added The total bacterial count, twenty-four hours after inoculation, was 300,000, and many typical typhoid colonies appeared on Endo plates Subcultures and agglutination were positive The last isolation, thirty-nine days after inoculation, showed very few colonies of any kind, and the total bacterial count was only 16,000 The ice cream showed the same separation as that of Experiment 1

Experiment 3—To an ice cream made like that of Experiment 1, except that to the quart 1 level tablespoonful of Knox gelatin was added, 40,000 typhoid bacilli per cubic centimeter of ice cream were introduced The ice cream was kept like that of previous experiments After twenty-four hours the total count was 660,000, and Endo plates yielded many colonies which proved to be typhoid bacilli The ice cream remained quite hard for about ten days and then softened, became separated into layers, was semifluid and stringy *B typhosus* was isolated for the last time twenty-five days after inoculation, and the total bacterial count on that day was 5,600,000

Experiment 4—Ice cream was made like that of Experiment 2, except that to the quart 1 level tablespoonful of Knox gelatin was added To each cubic centimeter of the ice cream, 40,000 typhoid bacilli were introduced Packing and storage was the same as in other experiments After twenty-four hours, the total count was 1,200,000, and a large number of typhoid colonies, as shown by subsequent tests, were present on Endo plates The consistency of the ice cream remained about the same as that in Experiment 3 The number of typhoid bacilli gradually decreased, and the last positive examination was made twenty-one days after inoculation The total count at that time was 500,000

Experiment 5—Ice cream was made the same as in Experiment 1, except that pasteurized milk and cream were used and nine grams of "Flake" were added to the quart Flake is a powder prepared by the Murray Company, 224 State Street, Boston According to a circular accompanying the powder, the preparation "is a pure, wholesome powder, which can always be relied on, and is essential in making an exquisitely smooth ice cream" To each cubic centimeter of the ice cream, 320 000 typhoid bacilli were added It was then packed and stored After twenty-four hours the total count was 1,440,000, and typhoid colonies were numerous on Endo plates After a few days the ice cream became quite soft, and separated into a watery and a cream layer Examinations made every few days gave positive results until thirty days after inoculation, when the experiment was discontinued The total count at the time of the last examination was 990,000

Experiment 6—To a preparation like that of Experiment 1, except that pasteurized cream and 9 gm of Flake to the quart were used, *B typhosus* to the extent of 320,000 per cubic centimeter of ice cream was added After storage for twenty-four hours, the total count was 1 600,000 and typhoid colonies were numerous on Endo plates The last positive result was obtained twenty-seven days after inoculation, when only one subcultural colony from the Endo plate proved to be *B typhosus* On the date of the last finding the bacterial count was 1 060 000 After a few days' storage this ice cream showed the same changes as that of Experiment 5

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[3] [illegible] Am Jour Pub Health, 1914, [illegible] n, 1055

[4] Tu[illegible] [illegible]actitioner London, 1892, xli[illegible] 141

[5] Munro[illegible] [illegible]ic Health, London, 1894-1895, vii, 30

[6] Hope [illegible] [illegible]ool Med Chir Jour, 1898, xviii, 185

[7] Behla Klin [illegible] Jahrb, x 256 [illegible] 517

[8] Rosenau Pre[illegible]entive Med[illegible]cine and Hygiene, New York, D [illegible]ppleton & Co, 1913, p 90

All of the preparations had about the same odor at the beginning They were pleasant smelling, owing largely to the presence of vanilla After a few days they began to lose their sweetness of odor, and at the time of the last examinations they gave off mildly unpleasant odors

CONCLUSIONS

1 *Bacillus typhosus* survives in ice cream for varying lengths of time, in the recorded experiments from twelve to thirty-nine days It is plain, therefore, that ice cream may easily transmit typhoid fever

2 The findings emphasize the necessity of strict cleanliness in the manufacture of ice cream, and the importance of pasteurization of milk and milk products used in these mixtures

1011 Madison Street.

TYPHOID FEVER RESULTING FROM INFECTION OF AN UNPASTEURIZED MILK SUPPLY

REPORT OF A SERIES OF FIVE CASES

DON B LOWE, MD
District Physician, Cleveland Division of Health
CLEVELAND

This series of five cases of typhoid fever is reported merely to emphasize (1) the dangers of an unpasteurized milk supply, and (2) the necessity of reporting contagious diseases to the proper authorities The details of the onset, the incidence of age, sex, etc., are in the records of the division, but are unnecessary in this brief report

Late in January and early in February, 1915, five cases of typhoid were reported to this division, each one of the patients having received his milk supply from the same dealer This, with the explosive character of the outbreak, made us suspect that infected milk was the cause With this in mind, the following plan of investigation was outlined first, investigation of the milk depot, second, of the dairy from which the milk came, which was located 90 miles from Cleveland, third, of the cases and their relation to other people to exclude contact, fourth, of the train-men, fifth, of the handlers at the depots at the shipping and receiving points

This procedure, including detailed data concerning the families of those inspected, yielded negative results until the handler who took the cans from the train in Cleveland was seen He stated that his wife had been ill about eight weeks with "what the doctor said was typhoid fever," but the doctor failed to report to the health department He said also that he had been given permission by the dealer to open the cans and take such milk as he required from them, and that this had been done both before and after and during his wife's illness Two weeks previous to the onset of her illness he had been off duty himself for five days with what he thought was the grip, but no doctor's diagnosis is obtainable The Widal on his blood gave a suspicious test and on that of his wife a positive test in dilution as high as 1 100 Stool examinations in both cases were negative, but were first taken several weeks after the onset of the disease We feel justified, however, in believing that these five patients, of whom one died, were infected by milk contaminated by this man Investigation showed that he had dipped the milk from the cans with a cup from his own dinner pail which was carried back and forth with him from his home The difficult point in the differentiation is whether the infection came from the man himself during an attack of typhoid which he thought was grip or from the infection of the wife, whose care was largely in the husband's hands

Had the milk been pasteurized on its arrival in Cleveland, this trouble would not have occurred Had the case of typhoid been reported by the physician in charge, the routine investigation would have given us at once information which would have prevented the carrier from coming into contact with the milk at any time Another point of value is that if the cans had been sealed, this series of cases could not have occurred

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DESTROYING LIMITED OBSTRUCTIVE GLANDULAR GROWTHS IN THE POSTERIOR URETHRA BY THE HIGH FREQUENCY CURRENT *

ROBERT V DAY, MD
LOS ANGELES

We are agreed, I take it, that for the most part cautery work in the posterior urethra, or at the bladder neck, by the various methods now in common use through an electrically lighted instrument, is tedious and capable of destroying but a small amount of tissue at a sitting The ordinary electric cautery point, while marvelously efficacious in relieving the early irritability and early irritation of incipient prostatism and also of ridding the patient of quite small projections and growths—even this requires many treatments at not too short intervals If the obstructing part or growth is considerable, it is often impossible to treat it effectively in this manner An ordinary urethral electric cautery point small enough to be accurately placed in plain view of the operator through an average sized urethra is so small, develops so little heat comparatively and in contact with living tissue is so quickly cooled that only the very small or succulent masses may be made to slough

High frequency current methods have attained great vogue, and justly But the methods of application are capable of great extension as, one at a time, difficulties are overcome The Oudin or monopolar current has been efficacious in bladder papillomas especially, where there is plenty of room to manipulate the electrode and obtain a long spark gap In the urethra it is more difficult by reason of close quarters, gases collecting and obscuring the view, also work in small space requires shortening of the spark gap to avoid unpleasant ground shock This is much easier to prevent with the bipolar current—the large neutral electrode being placed under the buttocks or over the pubes The devitalizing of tissue is much more rapid and extensive and secondary hemorrhage is less likely to occur We have had one case of very distressing and with difficulty controlled secondary hemorrhage after so-called fulguration with the Oudin current of a posterior urethral polyp, we have had none follow the bipolar method, though the latter has been more frequently used

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* Read before the Section on Genito-Urinary Diseases at the Sixty-Sixth Annual Session of the American Medical Association San Francisco June, 1915

Whether or not we use the Oudin or bipolar current, the work has been done through various types of instruments as follows once, through an open tube with the McCarthy fulguration electrode handle, but usually through a Buerger convex sheath operating cystoscope, a McCarthy cysto-urethroscope or a Braasch single catheterizing The differences in construction make one instrument applicable where another after a trial may prove not to be The Squier-McCarthy electrode was found most convenient and efficient, both the No 6 and No 11

One has cases, however, in which neither the ordinary electric cautery or the foregoing high frequency methods is adequate Such cases comprise carcinomatous prostates in which a partial removal has been done and a suprapubic fistula will not close, bladder neck contractures, when a punch will not pass, also bladder neck contractures when hemorrhage is feared, or for some reason adequate attention following the punch operation is not feasible, bladder neck shelves and band hypertrophy of the region about the glands of Albarran when a punch will not enter, benign growths of considerable size, comparatively, in the posterior urethra or at the bladder neck, cases of excessive pocket formation in the prostatic bed after enucleation for benign growths

The reason for the failure of the previously described procedures is plain The lesions are comparatively gross but mainly focal so far as obstruction is concerned There is simply too much tissue too dense to be destroyed by any such available and insulatable amount of electrical energy Up to the present time, so far as I have been able to learn, there has been brought forward no substance surrounding a conducting wire in sufficiently small radius and flexible enough that it can be fed into the very largest cystoscopic or endoscopic catheter channel now in actual use, capable of insulating the amount and kind of electrical energy absolutely necessary to completely devitalize such obstructions and cause them to slough We trust some one will soon bring to light some such substance

In lieu of the ideal insulating substance that is also flexible, we have resorted to the use of a nonflexible insulating material which also serves the purpose of a guard to regulate the depth of penetration of the electrode points It is simply a convenient length—8 or 9 inches—of silica tubing the diameter of a No 11 Charriere catheter One end is fitted into a groove of a pistol-shaped handle of fiber and made tight with a set screw The inside diameter is approximately 1 mm or that of a No 3 Charriere ureteral bougie Through the top of the pistol handle and on through the bore of the silica tubing is inserted a convenient length of drill rod or piano wire, sharpened to a needle point on the business end The usual length is about a foot The excess, bent over behind the handle, forms a small loop on the end in which to fix, with a watch-chain snap, the high frequency connecting cord The sharpened end of the wire is pushed out beyond the distal end of the silica tubing to any desired distance, usually 0 5 to 2 cm, and is fixed with a second set-screw The wall of the silica tubing being over a millimeter in thickness, acts as an efficient guard to prevent too deep penetration, and when fully up against a tissue produces a sense of resistance to the operator's fingers The manner in which it is used is very like the treatment of a mole by an ordinary electrolysis needle, except that the needling is all by parallel insertions The insulated and guarded needle is inserted through any open endoscopic tube most suitable for bringing that particular growth or obstruction into view and into direct line The most generally satisfactory tube with us has been the MacGowan urethroscope This with the vacuum-pump attachment keeps the field free from urine or blood present and the flat side enables one to place the electrode to better advantage A MacGowan-Swinburne tube is useful sometimes A Young's punch in bladder neck contractures and polypi that will present into the fenestrum is also exceedingly useful Once we used a single catheterizing Braasch with water distention In this case 1 cm of the wire at the needle end was bent at an obtuse angle from the body of the wire to better catch a nodule and polypoid growth

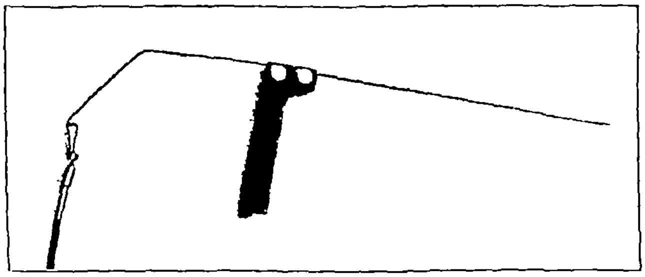
The part to be destroyed is brought into view at the end of the endoscopic tube and the electrode inserted to a depth previously determined on and insured by tightening the set-screw The current is then turned on with the foot-switch for from two to ten seconds, depending on the amount of tissue to be destroyed, the amount of current used, and the length of the spark gap The electrodestructive action extends radially around the needle and is quite circumscribed at both the periphery and the point The usual diameter of the slough is 3 or 4 mm, as we have made the applications One must use judgment as to the points of insertion, their number and their depth, usually two or three separate needle insertions being sufficient This is best learned by experimentation with small surface growths whose progress and sloughing can be watched subsequently at frequent intervals The sloughs come away in from forty-eight to sixty hours if the needling has been well performed

The silica tubing is quite brittle and sometimes breaks, but a new piece is easily and quickly inserted It would be nearly ideal except for this friability Larger sizes than are really needed for insulating purposes are for this reason necessary We have endeavored to find something superior The most promising prospective substance is Bakelite The authorized molders of Bakelite discouraged us at first in the use of this, but just recently the General Bakelite Company has given us faith that they will be able to supply us electrodes that will be more easily handled This should give the method a wider application in the urethra and in the bladder particularly with the electrode inserted through a single catheterizing Braasch In this way the number of treatments could undoubtedly be greatly reduced

The type of machine used should be one giving a constant milliamperage, no matter what amount of current (in reason) is being consumed, an absolutely induced current and one which is not taken off the main transformer, thus avoiding ground shocks This of course means a bipolar current, a d'Arsonval current may be used, but unquestionably the ordinary d'Arsonval has been improved on for this purpose If only this type of current is supplied by the machine, it considerably cheapens the cost and lightens the weight, thereby making it much more conveniently transportable to and from hospitals

I shall report the following cases occurring in the private practice of Dr Granville MacGowan and myself Out of 39 cases of intra-urethral or bladder neck cautery operations during the past thirteen months, 31 were by either the simple electric cautery or high frequency cauterization with flexible electrodes, 8 were done by the silica insulated wire needling and bipolar current Only selected cases were chosen for this method There were two failures and six successful operations

Case 1—W M, a large fat man, aged 65, had complete retention for the first time in September, 1913, with practically continuous catheter life thereafter for four weeks at hospital, when the bladder was opened suprapubically a large indurated prostate with both an anterior and posterior bar was found to be the cause of the obstruction Enucleation proved very difficult on account of the adhesions of the surrounding parts, the vesical sphincter and a portion of the seminal vesicle were partially torn away in an effort at enucleation and had to be removed with scissors The peritoneal cavity was accidentally opened at the bottom of the wound It was not considered necessary to dissect it away further, for there appeared to be a free enough channel without this, tissue being apparently cancerous and the hemorrhage very free and as the peritoneal cavity had been opened in the removal of the vesicle, doubt was entertained as to his operative recovery anyway When the packing was removed the peritoneal wound gave no trouble and had apparently closed With time the suprapubic wound healed with a small fistula Urination was very difficult and became progressively more so The bladder was reopened and an attempt made to remove the anterior obstructing bar He had a very thick abdomen, which with its powerful muscles made it impossible to reach all of the obstructing parts and do a complete resection of the growths and bar After wearing the suprapubic drain for months he was subjected to high frequency cauterization No instrument could be made to pass through the urethra into the bladder A MacGowan urethroscope was inserted down to the obstruction which presented very definitely against the opened end of the endoscopic tube but from the anterior wall Two insertions were made with the silica-guarded needle, about 1 cm apart In less than sixty hours six or seven sloughs came away and then he urinated for the first time in many months We repeated this cooking process in three weeks, cleaning away the rough points The suprapubic wound closed and the urine thereafter passed freely per urethram for eleven months, when the stream again slowed, and after the passing of a steel sound for dilatation, a terrific hemorrhage occurred which was very difficult to control The suprapubic wound opened again for a few days but finally closed, and he urinates again with reasonable comfort and frequency


Silica insulated and guarded electrode.

Case 2—A S P, aged 69, in September, 1914, had partial enucleation of the prostate which, microscopically, was carcinomatous A piece was removed the size of a walnut Beginning one month later through MacGowan tubes in the urethra, and Kelly tubes suprapubically, we needled the obstructing and irregular projections at four sittings The surface healed and was fairly smooth The suprapubic fistula closed, he went home and has urinated easily ever since

Case 3—B H, aged 76, in September, 1914, came from a neighboring state almost delirious after a twenty-four hour trip without urinating It was impossible to introduce a cystoscope Drained suprapubically for three weeks until phthalein increased and was constant The operation was a partial removal of the prostate, which, microscopically, showed cancer The suprapubic fistula healed tardily and he had from 2 to 6 ounces residual at all times Pocketed To improve matters he was needled through the urethra The needling could not be done at the crest of the obstruction The result was nil except a very disagreeable convalescence

Case 4—C C W, aged 65, in June, 1914, underwent enucleation of the prostate for fibro-adenomas Several months later a soft rubber catheter would not enter the bladder or return injected fluid Some slight irritation resulted and 1 ounce residual Needling in office was done under alypin and cocain anesthesia through a MacGowan tube The patient passed sloughs in thirty-six hours thereafter Since then a soft rubber catheter enters easily and residual has disappeared

Case 5—I C G, aged 50, came to Los Angeles suffering with extremely painful erections, occasional small urinary hemorrhages and sharp pain in perineum and rectum Small projections were at the sides and posterior surface of the urethra in front of the bladder neck. Residual, if any, not determinable, for the reason that no type of catheter large or small, nor any cystoscope, would pass into the bladder Most of the anterior nodules were burned away with electric cautery The needling operation was unsuccessful, the needle going into the tissues at an angle back of the urethra and not entering the crest of the obstruction He was later opened suprapubically, and had a banded bar at the bladder neck which was cut away with rongeurs and Young's punch Recovery, and objectively cleared up as subsequently determined by cystoscopic and urethoscopic examinations

Case 6—J W S, aged 54, in June, 1913, stone in the bladder with 4 ounces residual I crushed the stone and fulgurated the polyp in the posterior urethra near the bladder neck. Cystoscopy revealed marked trabeculation and a large diverticulum on the right side One year later residual was 70 c.c. Only long curved silver catheters or cystoscope would enter the bladder, there being inability to pass any flexible catheter Young's punch was inserted and needling done The spark gap had to be shortened by reason of metal contact at the end The punch could not be easily pushed back into the bladder and so it was decided to punch out the cooked portion. After two hours in office and practically no bleeding he went home 18 miles by trolley car, returned in three days and emptied his bladder and had had practically no bleeding Residual is 5 to 10 c c. at present

Case 7—J W B, aged 45, in January, 1914, underwent suprapubic cystotomy for stone A large diverticulum was on the right side near the ureter opening The bladder neck was very much contracted Circumstances over which we had no control gave us no chance to examine and study the case previous to operation The suprapubic fistula would not close In September, 1914, a radical operation for the cure of the large bladder diverticulum was preceded by needling of the posterior bladder neck through an endoscopic tube The patient left the hospital in seven weeks with no residual and has no residual at present.

Case 8—J W A., aged 60, had 2 ounces residual urine The urine from the left kidney contained a small amount of pus He had constant pains in the left testicle There was obstruction from a nodule on the left side of the posterior urethra near the bladder neck An ordinary electric cautery failed to make any impression on the obstructing nodule Operation was by needling through a single catheterizing Braasch with water distention Endoscopic examination six weeks later showed a smooth surface and residual had disappeared

CONCLUSIONS

1 A much greater amount of tissue can be cooked at a sitting than by ordinary high frequency methods

2 The point of application can be made to better advantage in some cases—especially when the urethra is somewhat choked

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Lissner Building

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Dr. Stanley R. Woodruff, Bayonne, N J The use of the cysto-urethroscope is very important, because there are so many lesions in the posterior urethra which are entirely overlooked It is particularly in these cases that the cysto-urethroscope is used and is of so much value, because the posterior urethra and bladder can be examined at one sitting The instrument of Dr McCarthy is an indirect instrument, and another good point about it is that it is a near vision instrument. Nearly all of the other indirect instruments are what we term far vision instruments, that is, one must hold the instrument at a considerable distance from the object in order to get a good view of it This instrument being a near vision instrument, one can put it exactly on whatever object one wishes to look at and get a clear view and the focus will be good I believe that patients, especially those coming to you complaining simply of frequency, in order to make a proper diagnosis, should have the posterior urethra examined as well as the bladder If you pass a cystoscope into the bladder and examine that alone, you have not done enough We have at present three young men complaining ever since birth of enuresis They have had almost everything done without effect. These cases under examination all showed a growth of tissue back of the verumontanum, filling up the fossa and even impinging into the internal sphincter, which gives you the reason why they were troubled as they were Every time the internal sphincter shuts down it would grasp this little mass of tissue We use entirely the d'Arsonval current We have given up the Oudin current The latter makes more fuss and cauterizes more quickly, but has not as deep an effect I have yet to see a case in which we could not burn out all the tissue necessary We use a constant irrigation, for at the same time you can burn and carry away all the bubbles, leaving a clear field of vision There has never been any trouble about getting sufficient penetration The electrode which Dr Day has shown I have had no experience with It seems to me pretty sharp to use in the posterior urethra Sometimes your patient makes a jump I should be rather afraid it would traumatize the urethra If there is any part we wish to traumatize less, it is the posterior urethra We have observed cases following injuries to the posterior urethra, showing nervous conditions, inability to have erections, and often inability to ejaculate. We use the ordinary soft, flexible, urethral electrode with the olivary tip

Dr. W P Willard, San Francisco Surely a note of warning should be sounded against the promiscuous use of instruments in the posterior urethra Unless a man has had experience in making an examination of the posterior urethra, and knows what he sees and can differentiate the normal from the abnormal, he should not use these instruments I have had within the last year two cases I would like to cite on account of the remarkable improvement they made in a very short space of time from the use of the Oudin current One of these cases was a man of 50 and the other was a man of 70 The prostates were not enlarged in any way, and there was no residual urine, but they each complained of great frequency, one man as often as every hour and the other man probably every two hours day and night They were examined cystoscopically and the prostatic outline appeared normal and the sphincter outline was regular The only thing noticed was a large number of small cysts projecting, as I have seen many times before, from the prostate and within the internal urethral orifice I used the Buerger cystoscope with the single wire and punctured as many of these cysts as I could In both cases I did it all at one sitting The man of 70 reported back within a week and he said he had not felt as well in twenty years Within three or four days after the manipulation, after the irritation from the instrumentation had subsided, he said he could hold with very little difficulty his urine for three hours, and had gone as long as four hours at night

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Florida and a "Health City"

At the meeting of the American Medical Association at New Orleans in 1885, Dr Washington Chew Van Bibber a distinguished physician of Baltimore, read a paper on Florida and its climate It is an interesting circumstance that thirty years afterward the *Manufacturers Record* should find in this paper observation and comment of sufficient value to interest its readers In its October number, the *Record* makes long quotations from this paper which deal chiefly with the advantages of the state as a winter resort, or as a resort all the year round, not only for pleasure seekers, but also for invalids of various types Dr Van Bibber contrasted Florida as a health resort with other sections of the United States and with the well-known resort regions of Europe

He made the interesting proposal that a "health city" should be built in Florida, and suggested that the nations of Europe and America be invited through the medical social and scientific press to unite in the erection and improvement of such a city This he felt was necessary because at that time the resorts of Florida were not in a sufficient state of sanitary development and improvement to fulfil the requirements of a perfect "health city"

Dr Van Bibber died in 1892 He did not live to see the fulfilment of his "health city" project, but with the modern development of city sanitation, all health resorts should become "health cities"

ANTEVERSION OF THE NECK OF THE FEMUR

IN CONNECTION WITH CONGENITAL DISLOCATION OF THE HIP *

RUSSELL A HIBBS, MD
NEW YORK

A careful study of my failures in the treatment of congenital dislocation of the hip has convinced me that some of those failures were due to anteversion deformity of the head and neck of the femur which was not recognized before operation

A certain number of those cases have since been treated with complete success by the method to be described

Anteversion of the head and neck of the femur has of course been recognized, but the frequency of its occurrence has not been appreciated, at least by me, nor its influence on the final result in the treatment of congenital dislocation of the hip Much more consideration has been given to defects in the acetabulum, and without doubt the acetabulum is more or less defective perhaps in all cases, and in some, to such a degree as to prevent cure I believe, however, that this deformity of the femur is more often the cause of failure to secure ideal results No case of congenital dislocation can be considered absolutely cured until the head is wholly in the acetabulum and the gait of the patient and function of the joint normal It does not seem possible to me to obtain such a result when this deformity exists to any considerable degree

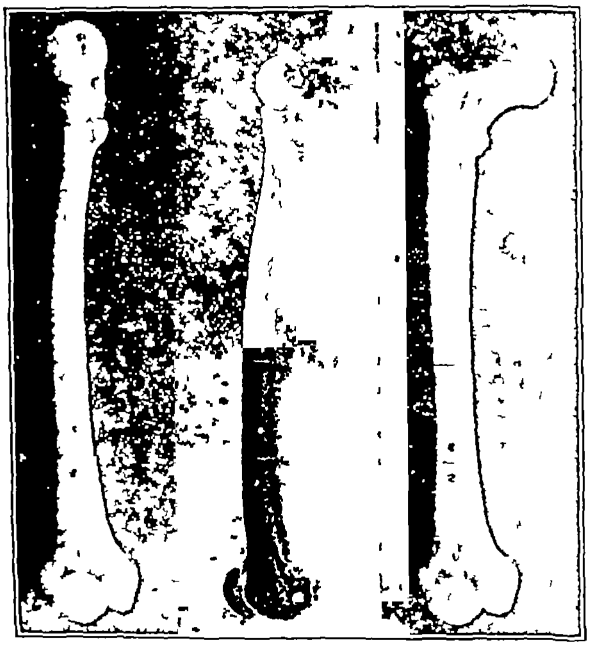

Fig 1 —An osteotomy of the femur at its lower third for the correction of anteversion of neck Bone at left shows anteverted head in center lower fragment twisted out correcting deformity at right deformity corrected normal bone.

There is a certain amount of anteversion in the normal femur, but probably not more than from 10 to 15 degrees Dr Durham, one of my staff at the Orthopaedic Hospital, recently made a study of 200 normal femora, and found that the average amount of anteversion was 11 degrees More than this amount is abnormal, and certainly when it is as much as from 75 to 90 degrees, grossly so With the leg straight and the toe and patella pointing forward in the normal direction, the head of the femur cannot be completely in the acetabulum With the head thus partially engaged in the socket, weight bearing is uncertain and there is always a limp

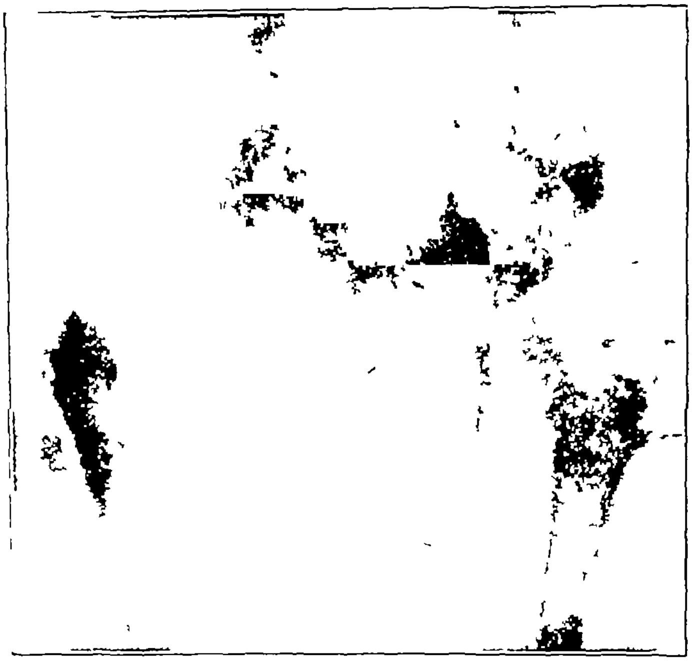

Fig 2 —Congenital dislocation of hip with anteverted head and neck of femur

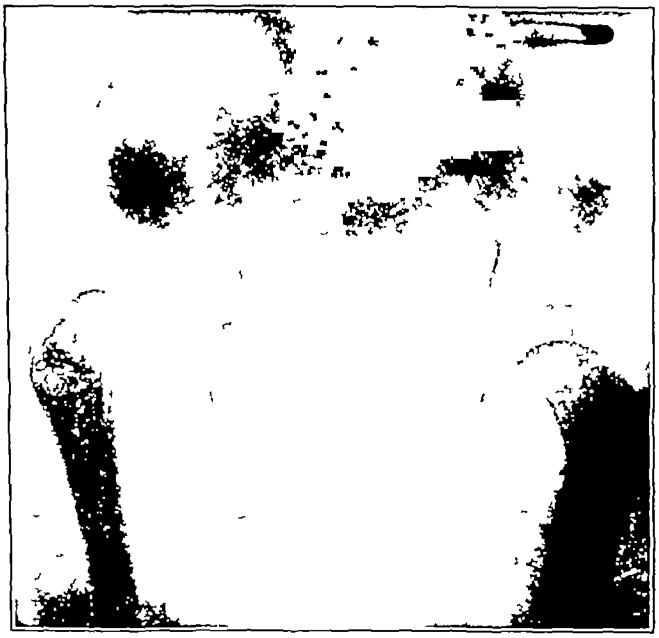

Fig 3 —After osteotomy deformity corrected

The question as to where the deformity takes place is an important one It seems probable that it is due *to a twist in the shaft of the femur, because by* Roentgen-ray study there is found no appreciable

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* From the Service of the New York Orthopaedic Hospital

* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association San Francisco June 1915

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urethra near the bladder neck An ordinary electric cautery failed to make any impression on the obstructing nodule Operation was by needling through a single catheterizing Braasch with water distention Endoscopic examination six weeks later showed a smooth surface and residual had disappeared

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CONGENITAL DISLOCATION OF THE HIP

REDUCED BY MANIPULATION FOLLOWED BY ARTHROTOMY *

JAMES T WATKINS, MD
SAN FRANCISCO

There has been considerable speculation as to what actually occurred when a congenital dislocation of the hip was reduced by the mechanical method So far as my reading goes, no one has reported any attempt to determine by operative procedure whether the femoral head became directly applied to the acetabulum or remained separated from it by a fold of capsule This paper records an attempt to solve this question

My clinical experience with congenital dislocations of the hip has been sufficiently extensive On the other hand, my opportunities to observe in detail pathologic anatomy have been meager

Two specimens were seen at the clinic of the late Professor Hoffa, one was shown me by M Redard, Dr Bradford demonstrated for me, if I remember aright, three specimens from the Warren museum, and I made a necropsy on one several years ago for Dr Sherman (a baby that had died of the measles)

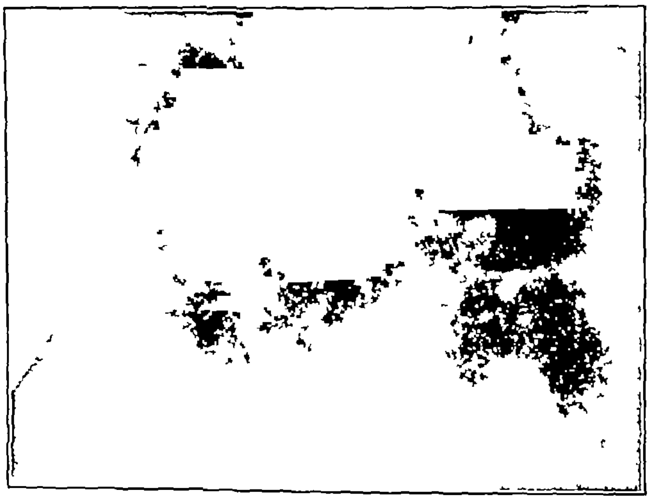
Fig 1 —Right sided congenital dislocation of the hip Reduced by manipulation and subsequently verified by arthrotomy

Observing these I had been able to verify what is common knowledge today of this condition, but found myself in much perplexity as to the changes brought about in the mutual relations of femoral head, capsule and acetabulum by the manipulative or mechanical reduction

In the Hoffa specimens I noted a demifacet in the anterior rim of the acetabular roof I regarded this as evidence in support of Lange's contention that the femoral head originally left the acetabulum by the anterior route I noted also that the specimens from older children presented a ligamentum teres drawn out to the thinness of a thread, when it was not actually absent It will be recalled that M Redard, in discussing personal statistics of one thousand cases, calls attention to late-appearing deformations of the femoral head and neck in cases in which operation had been successfully performed by the mechanical method

I felt that it would not be unreasonable to attribute this late-appearing distortion to defects of nutrition consequent on the occlusion of the artery in the ligamentum teres I was unable to explain, however, the roughness which he and we here have noted in the floor of the acetabulum in certain of these cases Possibly it is due to modified statics consequent on the changed shape of the femoral head

The hour-glass constriction of the capsule was apparent in all cases in which the patient had walked, as was the forward twist of head and neck on the shaft

One noted, too, that frequently there was a slight bowing of the neck with the concavity looking forward

The changes in the muscles, the shortening of adductors and hamstrings, I had demonstrated clinically, but the lengthening of pelvitrochanterics, to which Lorenz had called attention, was not apparent, and until just recently did not seem particularly significant

So much for a hasty review of the anatomy

In 1903 I had assisted Dr Sherman in operating on a patient on whom Professor Lorenz had previously performed a manipulative reduction In this case it was found that the femoral head had ruptured the capsule and come to lie among the adductors of the thigh

I pause to observe that I really believe Lorenz deliberately tried for an antero-internal transposition, because I can recall his first assistant Scholl telling us once in particular, after a mishap in which the patient went into sudden shock and there was reason to believe that one of the great vessels had been ruptured, that these accidents would not happen if the professor would content himself with a simple reduction and not try to displace the head internal to the acetabulum

I believe that, at that time at least, Lorenz attributed the permanent stability of his reduction to the tension of his pelvitrochanterics, and that he attempted, therefore, by the maneuver described, to bring their origins and insertions nearest together during the period of immobilization He also laid great stress on the stretching of the anterior capsule, though it is probable that he did not contemplate the rupture and escape of the head which actually occurred

Again, Lange demonstrated by means of a series of roentgenograms, of which I had tracings, but which were lost in the great fire of 1906, that except where an exceptionally long neck was present, the so-called "frog position" was apt to put, not the femoral head, but the greater trochanter into or on the acetabulum

Both he and Hoffa, who at that time was doing the open operation exclusively, immobilized in moderate abduction, full extension and internal rotation

When I discussed this with Lorenz, he assured me that he had nothing to say against internal rotation provided one employed external rotation first

The late Professor Panzeri of Milan employed abduction and an exaggerated internal rotation with knee flexed

These were the observations, for the most part undigested, which I brought back from Europe with me In view of them, first, and in view of the fact, secondly, that when I made the necropsy on Dr

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* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association San Francisco June 1915

Sherman's measles patient I did not think it mechanically possible to put the head by manipulation into the socket, and thirdly, because I found the capsular constriction exceedingly resistant even to a very sharp knife I became convinced that it was not possible by manipulation to place the head in the acetabulum, cartilage to cartilage, and in this idea I remained for several years

Last year I came across Dr Ridlon's description of his technic It sounded so easy that I thought I would try it as a preliminary to arthrotomy

My opportunity came October 31 of last year, when I performed a manipulative reduction on a muscular little boy of 6 years and 3 months

Without any great difficulty the head appeared to me to enter on rather than into the socket My associate, however, was very sure that it was only on the posterior rim of the acetabulum

Therefore, pending the test of the Roentgen ray, we immobilized the limb in abduction extension and internal rotation

Then the little boy got sick and stayed sick, so that it was not until Jan 30, 1915, that he came to the second operation

Permit me here to interpolate from the clinical records my notes of Dec 30, 1914, as well as those made at the time of operation

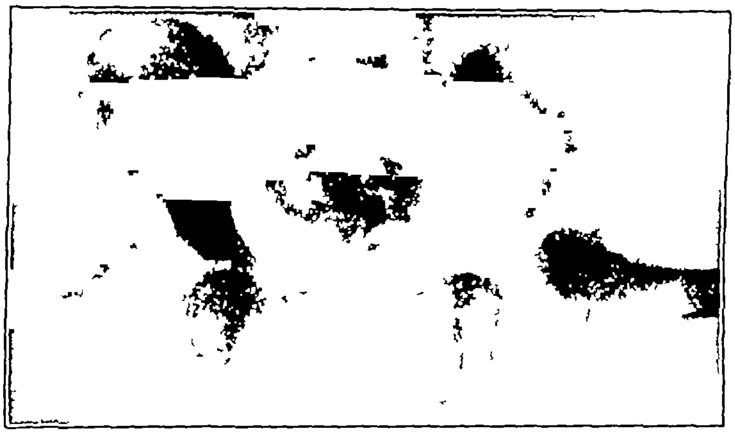

Fig 2—Bilateral congenital dislocation of the hip after attempted reduction by manipulation The right had reluxated The left was shown at operation to be within the capsule, but anterior to the bony part of the joint

Stereoscopic views were taken in two positions yesterday (1) with thigh in the position in which it had been held in plaster of Paris, that is, in very marked abduction and inward rotation, (2) with thigh in diminished abduction and patella looking forward It was agreed by all who studied the plates, Dr Birtsch, Dr McChesney and myself, that the head of the affected thigh was at the level of the acetabulum, and that the circle represented by the outline of the head and the circle of which the acetabulum formed an arc were concentric, but that the femoral head lay in a plane anterior to the acetabulum

Physical examination gave a resistance beneath the femoral artery, but no undue fulness beneath Poupart's ligament, such as we see in frank anterior transpositions There was no shortening, a false acetabulum was apparent above the site of the true one The latter appeared to have a fair "roof"

January 30, 1915, under the strictest aseptic precautions the usual longitudinal incision between the tensor fasciae and sartorius was made, and the capsule opened The capsule appeared to be adherent to the anterior aspect of the neck up to the junction of bone and cartilage The head was in the acetabulum, from which it was easily luxated Synovialis about head and capsule not adherent No fold of capsule in front of head as latter had entered acetabulum Liga- mentum teres gone Considerable fat in floor of acetabulum Anteversion of head and neck not marked Stability after reduction of dislocation excellent Wound closed in usual way and immobilized in abduction and internal rotation

June 14, 1915, cast off, stability good, walks with a sway but without a limp To come back in December for inspection

Subsequently a little girl, aged 4, appeared in my wards who had presented a bilateral congenital dislocation of the hip These, however, had been the subject of attempts at mechanical reduction at another institution

Here the stereoscopic pictures as well as the clinical findings seemed to show the right side in anterior transposition and on the left a frank reluxation

An arthrotomy was therefore done on each side, using the anterior incision On the left side reposition was easy, nor could one draw any conclusions as to the success or failure of the previous manipulation On the right side the head was not out In fact, because of the shrinkage which the pelvitrochanterics had undergone, it was only with difficulty dislocated On the other hand, the dilatation of the anterior capsule had been so complete that the joint would appear to have lost the feature which kept the head pressed back into the socket when the limb went into hyperextension

You will recall that the center of gravity of the body falls in a plane behind that in which lie the femoral heads Therefore, in such a case during the maintenance of the erect posture, the head must be tilted forward, and sooner or later acquire a sub spinous position

Though not germane to this subject, I interpolate here that this child suffered a secondary hemorrhage on the left side two days after the operation In stopping the hemorrhage there ensued a superficial infection, and in treating this a reluxation of the head on that side took place

Finally, I would say I am not satisfied with this demonstration It remains for one of us to approach the joint from the inner side, that is, behind the pectineus, then to incise the capsule longitudinally and actually see the femoral head peeping at us through the hourglass constriction Next close the wound and do a mechanical reduction, and finally reopen the wound and see in what way the relation of head, capsule and acetabulum had become modified Then we will cease speculation and actually know what we are talking about

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Personal Liberty and Infectious Diseases—The right to restrict the social activities of persons suffering from, or exposed to, certain infectious diseases is today everywhere admitted Possibly in future additional restraints will be imposed by the community on its infected members—though not necessarily without recompense to individuals—as the importance of checking certain infections becomes more widely recognized The havoc wrought by Typhoid Mary is not unlike the damage done by a mad dervish running amuck with a naked knife in his hand Why should the community expose itself to such exploits on the plea of maintaining personal liberty? There is no principle of personal right in such cases that must be maintained at all hazards The question of expediency in each case must be the deciding factor It is the right of the community to determine how far at the moment it is desirable to protect itself from hygienic evils Restrictions on the carriers of disease germs on the employers of labor and on the drinkers of alcohol, are in themselves perfectly proper and to be judged on the basis of community welfare, not merely on the basis of individual pleasure, profit or convenience—E O Jordan, Commemoration Volume 1915

STRUCTURAL CHANGES IN CONGENITAL HIP DISLOCATION *

WALLACE BLANCHARD, M D
Assistant Clinical Professor in Surgery (Orthopedic) Rush Medical College, Orthopedic Surgeon, Home for Destitute Crippled Children and University Hospital
CHICAGO

A diversity of forms of dismantlement and reconstruction are always shown in the roentgenographic presentation of a number of congenital hip dislocations taken before and several years after reduction In every case the roentgenogram offers a suggestion as to the best position in which to place and hold the leg in the plaster-of-Paris spica in order to secure stability of the head of the femur and ultimately a good functionating joint

In congenital hip dislocation, the obliteration of the acetabulum, the flattening of the head of the femur and the changing shape and direction of the neck are always shown in varying forms When the mushroomed or cone-shaped head of the femur is placed and held approximately where the acetabulum once existed, the head usually again develops and cartilage grows up around it and deepens till, by a rebuilding process, a more or less functionally perfect joint is formed The technic of bloodless reduction has steadily improved since the first visit of Professor Lorenz to this country in 1902 The forceful stretching method then employed, which frequently resulted in fracture of the femur without replacement, was superseded in 1904 by Prof Albert Hoffa's milder manipulative reduction

Some operators stretch every possible set of muscles and reduce over the superior or posterior rim of the acetabulum Other operators, without preliminary muscle stretching, flex the hip and press strongly and continuously down on the knee till the head is pushed below the acetabulum, and then lift the head over the lower rim into position The dangers of fracture or of other injury are largely decreased when the head is reduced over the more shallow lower rim A reduction should not be accepted as satisfactory unless the head of the femur can be felt in the groin

After the reduction, it is the position of the limb in the plaster-of-Paris spica that gives it stability or lets it go out The roentgenogram usually gives a good indication of the position in which the leg should be held to secure stability

If a small portion of the roof of the acetabulum is left so that it is shown in the roentgenogram even as large as a pea, a posterior dislocation may be reduced with a reasonable certainty that it will remain secure if the hip is firmly held in the Lorenz position of 90 degrees both in flexion and abduction

The short unilateral plaster-of-Paris spica secures sufficient fixation for practical purposes of stability The following case is presented to cover several points, including the opposing views of many European surgeons who agree with Bankart[1] that "a unilateral plaster is unsatisfactory as it does not fix the hip properly"

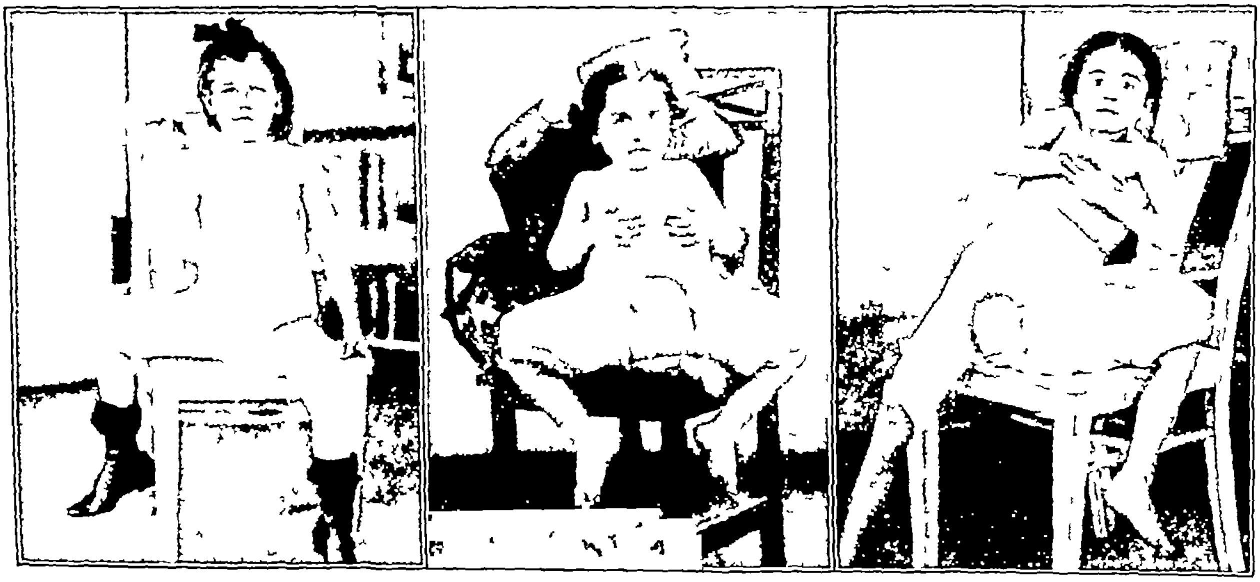

Fig 1—A (at left) B J (Case 1) in plaster-of Paris spica after reduction of congenital hip dislocation *B* (in center) R G (Case 2) in plaster soon after reduction *C* (at right), H F (Case 3) in plaster soon after reduction

Case 1—B J, girl, aged 6 years, with a congenital dislocation backward of the right hip, and the leg 3 5 cm short The roentgenogram showed the acetabulum obliterated except for a small flat button that was left of the roof The head was atrophied and mushroomed to half its normal size and thickness The neck was shortened and elevated The dislocation was reduced and the hip was placed in the position of 90 degrees flexion and abduction and put in the short unilateral spica as shown in Figure 1 *A* One month later the patient contracted diphtheria and, following the use of antitoxin, developed a dermatitis under the plaster spica necessitating its removal Pneumonia followed the diphtheria, and after eight weeks without the plaster I found the head of the *femur still in place The rebuilding of the articulation had* gone on without interruption The plaster spica was renewed, and eight months after the reduction it was discontinued and the patient left to her own devices

A roentgenogram (Fig 2) taken soon after the removal of the spica showed a tilted pelvis of abduction with the head in place A light strip between the head of the femur and the acetabulum indicates the space that is filled by the new acetabulum that is not yet sufficiently advanced in calcification to show in the picture, but is serving well for retention

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* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association, San Francisco June 1915

[1] Bankart A S B Treatment of Congenital Dislocation of the Hip Brit Med Jour 1913 i 1044

Walking for several months after the plaster spica has been removed with the leg in abduction has a double advantage of deepening the acetabulum and of keeping the head more securely in place

A roentgenogram (Fig 3) taken three years after reduction shows a new femoral head built up over the atrophied and mushroomed head to the full size of the normal head, and above that a new acetabular roof shows dark and strong, and the hip is functionally good

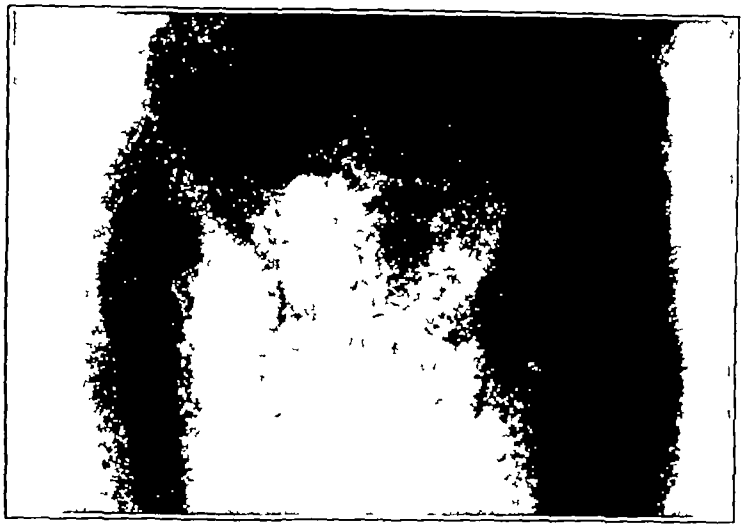

Fig 2 (Case 1) —Roentgenogram taken soon after the removal of the plaster spica

Case 2 —R. G, girl, aged 3½ years, with double congenital hip dislocation A roentgenogram (Fig 4) showed a double congenital hip dislocation with small buttons as the only remnants of the overhanging roofs Reduction was made over the lower rim, and the hips put in plaster in the right angle flexion and abduction position

A photograph (Fig 1 *B*) was taken soon after the reduction One month after the reduction the patient was reported dangerously ill with diphtheria, and following antitoxin a dermatitis developed under the plaster, which was removed After four weeks without the plaster spica a roentgenogram was taken that showed both femoral heads to be in place The legs remained in the "frog position," and a new plaster spica was applied

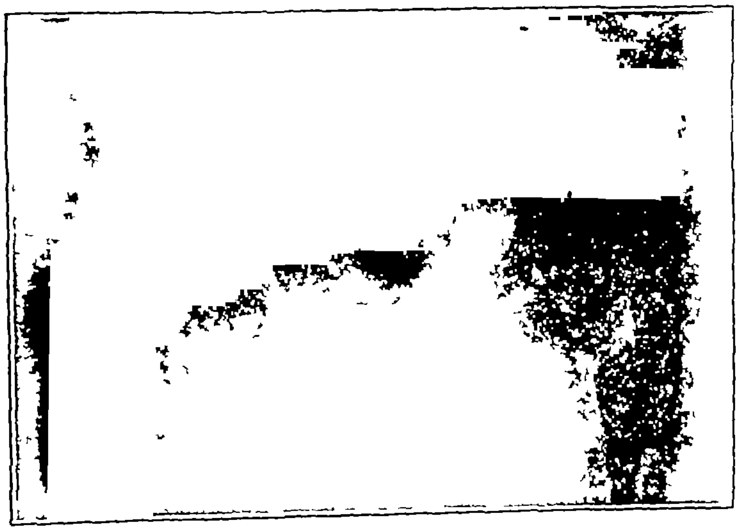

Fig 3 (Case 1) —Three years after reduction

The roentgenogram of this case showed small round buttons of bones as all that remained of the roofs The visible remnants of the roofs were, of course, supported by considerable decalcified bone, and these formed buttresses against redislocations

Case 3 —H F, girl, aged 6 years, with left hip dislocated posteriorly and leg 3 5 cm short The reduction was too easy and no security was imparted to the head with the leg either in the primary position of Lorenz, or in the Lange position, but elevating the hip to 30 degrees above the Lorenz position toward Werndorff's axillary position imparted stability A plaster spica was applied with the hip in this exaggerated position and left for eight months in the belief that the objections to so doing had not been sustained The normal leg was included in the plaster as a counter lever to secure fixation, as shown in Figure 1 *C* The plaster spica was removed after eight months and the patient left to her own devices The leg was over a year coming down from abduction to normal position

The roentgenogram (Fig 5) taken soon after the removal of the plaster shows a tilted pelvis decalcification of the upper end of the femur and the adjoining pelvic bone as well as a roughened outline at the original seat of the acetabulum An irregular cavity marks the original site of the acetabular roof, which explains why the leg had to be elevated toward the axillary position to secure stability

The second roentgenogram (Fig 6), taken two years later, shows a recalcification of the lightened bones Also a new roof shows the dark shadow of strength, and the head of the femur is in place Even after three years there remained a slight suggestion of abduction, though the leg was functionally perfect

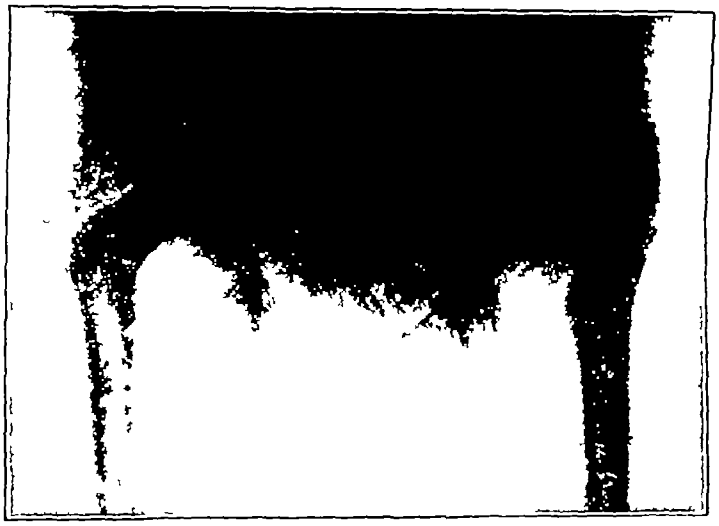

Fig 4 (Case 2) —Double congenital hip dislocation with small buttons as the only remnants of the roofs

From three to five years may be taken as the age for reduction to get the best ultimate results The increasing dismantlement of the unreduced hip joint as the child grows older and the insufficient ossification in younger children that allows soft bone to give way during and after reduction must be considered The following case presents the two sides of the question

Case 4 —M H, girl, aged 2 years and 3 months, with congenital dislocation backward of the right hip, and the leg 3 3 cm short A roentgenogram (Fig 7) taken before reduction showed that the right upper femoral shaft and neck had about one half the diameter of the left The head of the femur had almost disappeared, and the overhanging shelf was nearly obliterated A roentgenogram (Fig 8), taken two and one-half years after reduction, showed a redevelopment of the upper femoral shaft, neck and head Also the roof had reappeared dark and strong But note the wide strip of light between the head of the femur and the nearest bone of the pelvis that indicates the situation of the soft reforming acetabulum and femoral head Experience shows that weight bearing will cause this pliable acetabulum and head to give somewhat so as to produce some shortening before recalcification and ossification are sufficiently advanced to afford a stable joint The ultimate result is likely to show that the reduction was made too early, though at present the legs are the same length and function is perfect

Changing the position of the leg after two and a half months in plaster, as is advised by Calot and others, interrupts the rebuilding of the articulation which is necessary to secure a stable joint

The prognosis may be said to be favorable in posterior dislocation, unfavorable in forward dislocation and unfavorable in upward dislocation, if on rotation of the leg the head can be felt both anteriorly and posteriorly

Bankart's[1] conclusion that "no operative method reaches the excellent results obtained by manipulative reduction" has been quite generally accepted The elimination of unnecessary violence has marked every step forward in the reduction of congenital hip dislocation

CONCLUSIONS

Experience seems to warrant the following conclusions

A shortened or twisted neck in a coxa valga position may look unpromising in the roentgenogram, and yet present no bar to a good reduction and ultimately to a good functioning joint

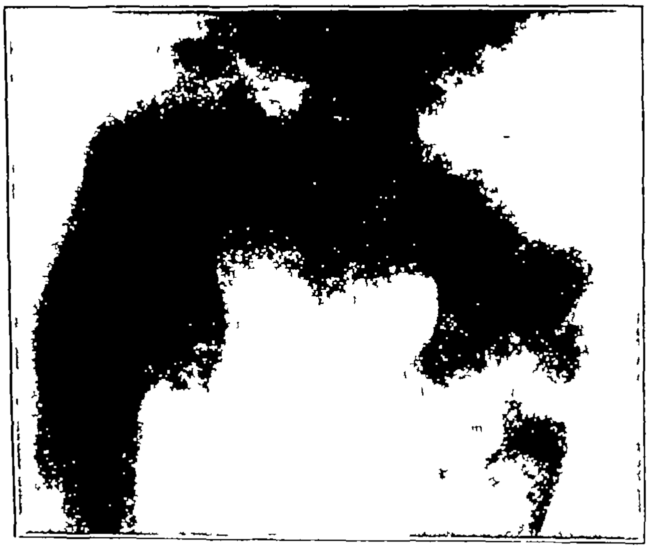

Fig 5 (Case 3) —Soon after removal of the plaster

Eight months is the shortest time in which a dependable acetabulum reforms, and any radical change in the position of the leg interrupts the rebuilding process The unchanging pressure of the femoral head accelerates the absorption of the extraneous structures that obstruct the acetabulum After the plaster spica has been removed, the child should be left to its own devices, and the longer the abduction remains, the more stable the joint will become

The best functional result may be obtained in children from 3 to 5 years of age and with from 2 5 to 4 cm of shortening There is no age limit, upward The older the child and the greater the shortening, the more secure the replacement, if it can be made The difficulty of reduction increases with the shortening after 4 cm have been passed A reduction by steps can be gained in older children with 5 cm or more of shortening by following the practice of the Vienna school The head should be brought as near as possible to the acetabulum and put into a plaster spica just the same as if reduced, and a second attempt, made three weeks later, may result in a satisfactory replacement

Reduction should be delayed in all cases of 3 years or younger and that show 2 cm or less of shortening

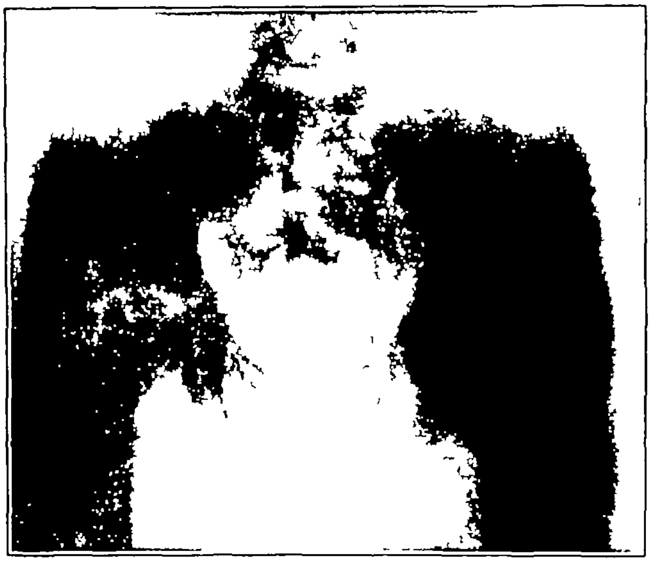

Fig 6 (Case 3) —Two years after removal of the plaster

The child needs all the freedom that can be safely accorded, and a great majority of unilateral cases will do best in unilateral plaster spica

The reduction must be made at an age of susceptibility to diphtheria and other children's diseases, and the two cases here given show that if the plaster spica has been on a month or more and the roentgenogram reveals even a small remnant of the roof, the plaster may be left off one to two months with the patient on the bed without much danger of a redislocation

If the roentgenogram shows delayed ossification from rickets or other causes, the reduction must be postponed Roentgenographic observations of the hips should be taken before and after reduction and at frequent intervals so that a careful watch may be kept of the bone regeneration that produces a good joint

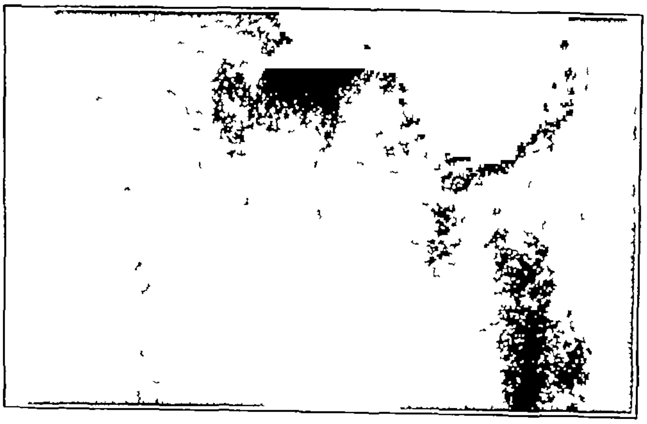

Fig 7 (Case 4) —Before reduction

Perfect or satisfactory function may be obtained in a large majority of the unilateral and a fair proportion of the bilateral cases

The case that looks the best may turn out the worst, and the reduced hip that feels the most stable may be the first to go out, but a careful roentgenographic study of each case will go far toward placing the reduction of congenital hip dislocation on a more assured basis

15 East Washington Street

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS HIBBS, WATKINS AND BLANCHARD

Dr John Ridlon, Chicago I believe that Dr Hibbs' operation is wholly unnecessary He was good enough to let me replace one hip after he had turned the thigh bone, as he showed you today I was very anxious over the case and found it very difficult because things did not feel natural I believe that the operation recommended by Dr *Watkins and done by Dr Sherman* yesterday is wholly unnecessary I believe that there is a great deal less deformity about the head and neck of the femur than we have been accustomed to believe Some hips are dislocated backward and upward, some are dislocated forward and upward, and some are dislocated directly upwards We have talked about the twisting of the neck for years and years, and believed that existed I do not know whether it does or not. Now we are told that it is not there, that it is in the shaft, but I do not know whether the shaft is twisted or not We have believed that all these dislocated hops had "hour-glass" contraction, so that the head could not be tucked back through the narrow passage I do not think they all have it, some of them may, and very likely some of them do have it We have been taught that the sockets were all malformed and filled with fat, fibrous tissue, and the cotyloid ring had so narrowed that the head could only go to the opening of the socket and not into the socket Now I am sure that is not so in some cases I am sure that the main fault in most of these congenital hips is because of a defective and a shallow socket, and here is my evidence, in two pictures that I will pass first, of a man, 52 years old, a policeman, 6 feet 4 inches tall, and tremendously broad and heavy, and he had never had a particle of trouble with his hips in his life These pictures show that in one hip only two-thirds of the head is included in the socket, and in the other hip one-half of the head is included in the socket Here is another picture with a socket no deeper than the palm of my hand I replaced this hip several years before Lorenz came here When the plaster was taken off, the hip appeared to be normally in place I did not see the child again until several years afterward when the existing condition was found She walked with scarcely a perceptible limp I believe no man, whether he manipulates by my method or Lorenz' method or Davis' method or any other method, or cuts down on it by Hibbs' method or Sherman's method, will get a better socket than Hoffa used to get, and many of his slipped out

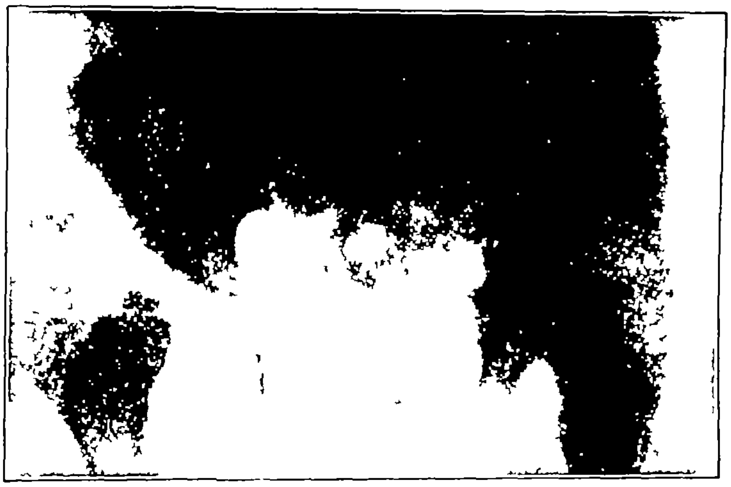

Fig 8 (Case 4) —Two and a half years after reduction

However you operate, whatever your methods are, you will get, according to your skill, a certain percentage of good cases, and you will have a certain percentage of cases in which the hip slips out

Dr Leonard W Ely, San Francisco During the reading of these papers a thought has occurred to me which I think would be well to mention In visiting one of the hospitals in the city here a few days ago I saw a patient who was to be operated on for congenital dislocation of the hip The roentgenogram showed the dislocation There was no wound on the leg, no history of any disturbance at all The mother had simply brought the child in and left it on account of its failure to walk I recognized the child as a patient I had treated several months before for arthritis I had withdrawn a syringe full of pus from the hip The arthritis slowly subsided without further treatment, leaving behind a typical dislocation of the hip, with no sign whatever of any operation, and I wondered how many of these cases that come to us in this walk of life are of the same kind

Dr Russell A Hibbs, New York There is one other point which I did not make in my paper There must be some relation existing between the direction of the head and neck of the femur and the direction of the center of the acetabulum It is quite possible in some cases that the amount of anteversion in normal femurs and in normal heads varies, and to meet that condition there must be a variation in the direction of the center of the acetabulum It is obviously very difficult to determine that question

Dr James T Watkins, San Francisco Among the procedures which we of the Children's Hospital staff have been employing of late years in the treatment of our congenital hip dislocations has been the subtrochanteric osteotomy which was first advocated by the late Professor Schede of Bonn as a means of correcting the forward twist of the upper end of the femur on the shaft We differ from Dr Hibbs in that we make the correction after reduction instead of before it, and attack the upper instead of the lower end of the shaft Regarding the results of arthrotomy followed by osteotomy, our most careful estimate has given rather better than 70 per cent of cures, which were both anatomically and functionally complete Dr Ridlon has lifted a great weight from my mind If I understood him aright, one may reduce a congenital dislocation of the hip, and if God so wills it will stay reduced, otherwise it will not. Often in the still watches of the night I have worried lest imperfect results in my cases of congenital dislocation might be due to my own defects, and, humbly confessing my sins before God, I have sought diligently wherein I might do better But now since I learn that not I but God did it, I feel better and shall sleep better

Dr Wallace Blanchard, Chicago Wolf's law governs in dislocation of the hip and in the replacement of the head of the femur, the same as it governs and controls the breaking down and reconstruction of other parts of the body The acetabulum distorts and flares out and the direction of the head and neck changes during the whole period of dislocation, but after replacement, the head builds up in the direction where the stress of weight bearing occurs and the overhanging shelf builds up where the stress of weight bearing must fall, and so Wolf's law governs and helps to replace the hip joint and make it something toward the normal

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Top Notchers and Thoroughness—The third class are the top men, men who are careful, thorough and conscientious in their every relation to their patients and to their profession There are more of them in Tennessee this year than there were last year, and there will be more next year than this Their example is telling and they all belong to their county medical societies Had you noticed that?—Editorial, *Jour Tennessee State Med Assn*, August, 1915

THE SIGNIFICANCE OF THE FIXATION OF CERTAIN ABDOMINAL ORGANS IN THE HUMAN BODY*

ROBERT C. COFFEY, M.D.
PORTLAND, ORE.

In studying the abdominal cavity from the standpoint of comparative anatomy we find that in man the capsule of the liver has fused with the diaphragm, while in the quadruped the liver is suspended by a mesentery the same as other organs. In man the duodenum is firmly fixed to the right abdominal wall, while in the quadruped it is freely movable. In man the ascending and descending colon and the two flexures are normally fixed to the posterior abdominal wall without the intervention of mesentery, while in quadrupeds the large intestine has a long mesentery and is therefore freely movable. In man the great omentum grows down over the transverse colon and adheres to it. This does not occur in the quadruped. In man the omental bursa is usually obliterated by adhesion of its layers together. Obliteration does not take place in the quadruped. In man the pancreas has been rotated behind the peritoneum and fixed to the abdominal wall. In quadrupeds the pancreas lies between the layers of the mesentery. In the monkey, which is a quadruped with a tendency to stand erect, the pancreas becomes adherent and the duodenum is more firmly fixed than in the original quadruped.

Going more into detail we find that in early fetal life, soon after the beginning of the formation of the alimentary canal, as it elongates, the duodenum, which at first has a mesentery or mesogastrium, turns over to the right carrying, with it the buds of the pancreas. The duodenum with its mesentery or mesogastrium lies down, so to speak, on the right posterior primitive parietal peritoneum and adheres to it. Thus the duodenum and pancreas become retroperitoneal and fixed. As the colon elongates the cecal end works its way upward and to the right and then down again, locating itself on the posterior and right lateral wall of the abdominal cavity, external to the kidney. The same position is assumed by the descending colon on the left side. At these points the ascending and descending colon and posterior layers of their mesenteries become adherent to the posterior parietal peritoneum, the endothelial surfaces of which become obliterated. Thus the ascending and descending colon not only fix themselves, but put in front of the kidneys the fibrous elements of two extra layers of peritoneum and the vascular and connective tissue structures of the mesenteries of these parts of the colon. The ascending and descending colon and their angles are not only fixed thus by adhesions, but are fixed on a shelf, having an angle of 51 degrees to the perpendicular. This leaves the transverse colon unsupported, except at the flexures and for its own mesentery, until the omentum grows down in front of it and attaches to it. This adds two more layers to its mesentery but does not give it any material support, owing to the fact that primarily the omentum is a sac and the transverse colon is only attached to the posterior layer. Later on, however, often not until nearly adult life, the omental bursa becomes obliterated up to the transverse colon, which gives the colon an extra support from the bottom of the stomach, in the form of a gastrocolic omentum. It is well to bear in mind that the gastrocolic omentum gives no support whatever to the colon until such peritoneal adhesion and consequent obliteration of the omental bursa takes place.

Unfortunately these adhesions do not always take place in man. Very rarely is it true that the duodenum and pancreas fail to adhere to the posterior abdominal wall. Occasionally the omental bursa completely fails to obliterate and permits the center of the transverse colon to swing from the flexure without the support of gastrocolic omentum, and occasionally this condition produces serious intestinal stasis. Occasionally the descending colon alone is not fused with the parietal peritoneum and produces, once in a great many cases, a unilateral left floating kidney. The relative infrequency of a left is probably due in a large measure to the costocolic ligament and the gastrosplenic omentum which hold the splenic flexure up much more firmly than the right is held. From 20 to 30 per cent of human beings have an incomplete fusion of the cecum and ascending colon and its mesentery with the posterior parietal peritoneum. This deficient fusion is of several degrees.

First, the cecum and ascending colon alone may be mobile and very baggy and dilated, swinging from a hepatic flexure which is firmly fixed in its normal position. In a few of this type of cases a false membrane or veil has formed, known as Jackson's membrane. This type occurs so frequently and is so slightly mobile that it may be classed as normal.

In the second class of cases the colon has only partially migrated and has attached the hepatic flexure to the front surface of the kidney, leaving the cecum and ascending colon (while the patient is in the erect posture) swinging from the peritoneum on the front surface of the kidney. This peritoneal attachment has been described by Longyear as a distinct anatomic entity under the name of nephrocolic ligament. In some instances the weight of this baggy cecum dropping directly downward pulls the kidney out of position and produces the frequently seen right-side floating kidney. At other times the kidney holds its position, the pendulous colon swings from its attachment as a tube hung over a nail, producing an intermittent obstruction with consequent dilatation of the cecum and ascending colon, resulting in severe intestinal stasis, or the intestine may pull loose, leaving the kidney in its normal position while the hepatic flexure is mobile also. Some of these cases have become partially fixed by a Jackson's membrane.

In the third degree of nonmigration the hepatic flexure attaches to the front surface of the duodenum, when the pendulous baggy cecum with its fluid contents, especially in an individual who has become thin, at times pulls down so strongly on the duodenum as to kink the duodenum at the ligament of Treitz, and also at the junction of the first and second portion of the duodenum. Such a case shows a duodenal stasis with the Roentgen ray, the symptoms of gastric ulcer in the clinical history, and a dilated duodenum at the time of operation. We have seen such patients whose stomach symptoms were entirely relieved as soon as the cecum and ascending colon had been removed. We have seen other cases in which the same relief was obtained by fixation of the ascending colon and the first half of the transverse colon which makes the colectomy unnecessary.

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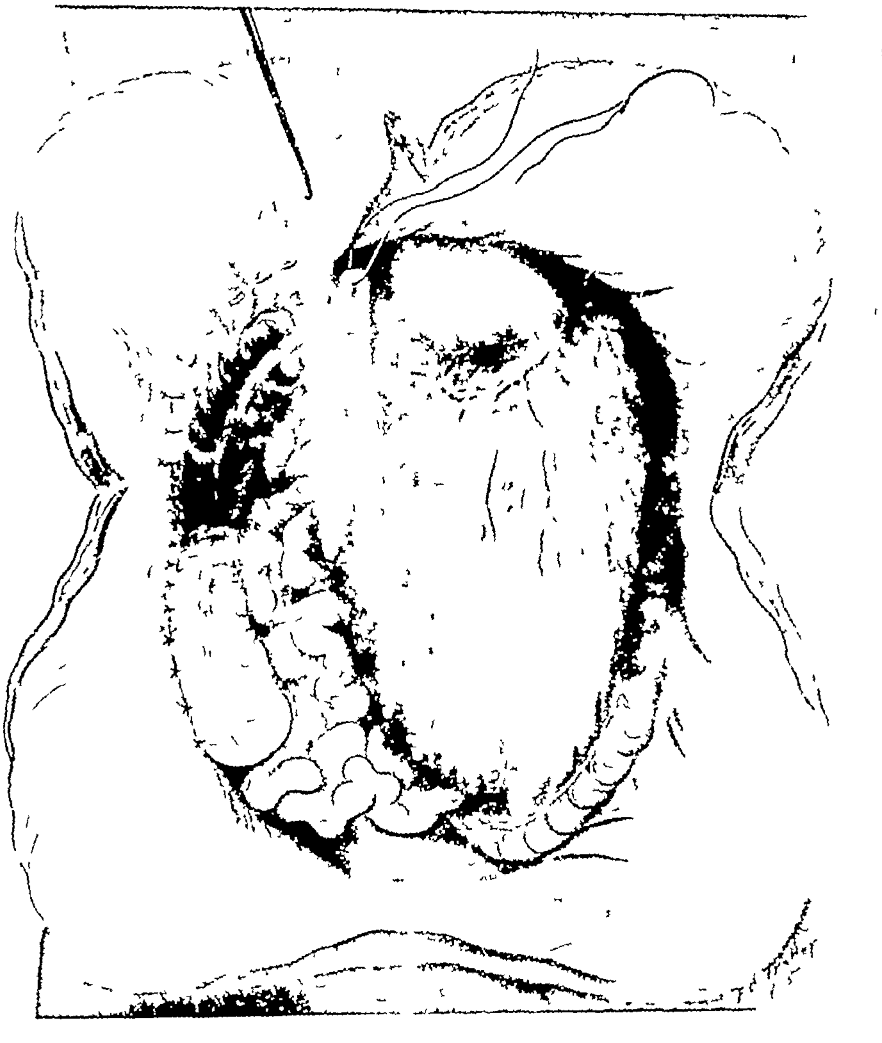
* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

The fourth degree of nonfixation of the ascending colon is seen occasionally and is complete nonfusion in which neither the kidney nor duodenum has been covered by the mesocolon in which very extreme intestinal stasis existed which was relieved entirely by fixation operation by the method shown in the illustration

In a certain per cent of human beings there is a nonfixation of both the ascending and descending colon These are the cases in which the so-called congenital type of enteroptosis occurs, in which both kidneys and all the hollow viscera tend to fall to the bottom of the abdomen, so that when the child reaches maturity the lower abdomen is dilated, the upper abdomen is contracted, the back is straight in an effort of the body to get in under this load and assume the carrying position We contend that this typical picture of so-called congenital ptosis is due, in nearly all if not in all cases, to a deficient peritoneal fusion, and that the peculiar body formation is nature's effort to make the best of a bad job It is in these cases of nonfusion that all floating kidneys occur We have been carefully watching for four years and have not found a single case of floating kidney which was not proved on the operating table to accompany a deficient fusion of the ascending or descending colon In other words, a floating kidney is entirely a secondary condition, which accounts for the fact that the operation for floating kidneys has been considered a failure by most surgeons



Scheme of operation for anchoring the cecum and ascending colon and suspending the first half of the transverse colon by the great omentum, for a certain form of intestinal stasis

What is the remedy for these defects? In cases of deficient fusion on both the right and left sides, resulting in ptosis with the characteristic body formation, surgery is usually not advised nor indicated Forced feeding, therebv increasing intra-abdominal pressure, with exercises such as Goldthwaite and also Martin have recommended, will produce the best results Occasionally the symptoms of a patient suffering from general ptosis are so severe as to require surgical procedure, in which case nothing short of the following operation will do permanent good, namely, the fixation of the ascending and descending colon and the two kidneys, through two separate posterior incisions as described later

Second, the opening of the abdomen and making a complete partition in the abdominal cavity by stitching the omentum beyond the colon to the parietal peritoneum from one side to the other, thus making a water-tight partition, as we have had opportunity to see at a later operation

After this operation has been completed the upper abdomen is expanded Fortunately this very extensive operation is rarely necessary but if any surgery is attempted in the case of general ptosis with the body habitus described by Glenard and Goldthwaite, it is perfectly useless to do less I have performed this complete operation for general ptosis six times with very satisfactory results, and with much improvement in the patient's health

A right-side ptosis, however, calls for more frequent surgical interference A right-side ptosis with a floating kidney accompanied by severe intestinal stasis, pain not relieved by dietary measures, admits of surgical treatment which consists first in making a posterior incision made just as if it were intended to remove the kidney and the first part of the ureter Before the kidney is disturbed the peritoneum is opened, the appendix removed and the colon sutured to the parietal peritoneum The peritoneal opening having been closed, the fat capsule of the kidney is opened, a door-flap hinge 1½ inches wide, of fibrous capsule of the kidney, is peeled off each side, a piece of the quadratus lumborum muscle as large as the middle finger is split off, two or three quilt chromic catgut sutures are passed through each flap of fibrous capsule, the two from the posterior flap are drawn around back of the separated strip of quadratus lumborum and tied to the corresponding sutures from the anterior, thus using the flaps of kidney capsule like a basket handle around the muscle The posterior part of the fat capsule is now brought up through the same slit in the muscle and sutured to the front part of the capsule, thus making an additional basket handle of fat capsule

There are also certain cases of severe intestinal stasis in which the kidney is not movable and in which the hepatic flexure may or may not be movable, giving severe pain in the right side or possibly dragging on the duodenum and producing symptoms of duodenal ulcer, but not relieved by any kind of dietary measures Such a patient may be entirely relieved by suturing the cecum and ascending and first half of the transverse colon by its omentum to the parietal peritoneum This, the most frequent operation indicated in the dealing with all defects of peritoneal fusion, is performed as follows A long right rectus incision is made to expose the entire length of the cecum and ascending colon If any false bands or membranes have formed they should be cut and a series of purse-string sutures of very fine linen or silk passed but not tied, beginning at the cecum Each purse-string suture should begin at the true parietal peritoneum to true peritoneum of the colon preferably including a small bight of a longitudinal band Small bights of the intervening loose tissue should be included These sutures should be placed every ½ to ¾ inch back toward the normal location of the kidney where the hepatic flexure is fixed Then the intestine is turned forward and attached by its loose peritoneal connective tissue to the lateral peritoneum to within an inch of the incision and also near to the beginning of the omentum At this stage of the operation the wall on the median side of the incision is lifted and the omentum sutured to the anterior parietal peritoneum from the median line backward to meet the other line of sutures The omental sutures are of chromic catgut to avoid the danger of extension of a possible infection of the abdominal wound to the line of linen sutures which in two of my early cases kept up a discharging sinus for months until the linen sutures came out

Occasionally a very severe case of constipation is due to the lack of obliteration of omental bursa, and cannot be cured by either dietary or medical means, but is entirely cured after suturing the omentum to the abdominal wall, thereby at once obliterating the omental bursa and holding up the middle of the transverse colon, which prevents the drag of a loaded transverse colon on the flexures

CONCLUSIONS

1 Prenatal fixation of the pancreas, duodenum, ascending and descending colon and their mesenteries to the parietal peritoneum, of the liver to the diaphragm, of the omentum to the transverse colon, and the obliteration of the omental bursa, are evolutionary changes which help to fit man for the erect posture are not found in quadrupeds

2 All cases of floating kidney with general visceroptosis are found in patients whose ascending and descending colon with mesenteries have failed to properly adhere to the parietal peritoneum Surgical fixation of a floating kidney without fixing the colon is not based on sound surgical and anatomic principles, hence the failure of such operations in the past and necessity for surgical fixation of the colon at the same time

3 Many cases of intestinal stasis are caused by the disturbed relations of the parts of the intestinal tract resulting from normal fixation of the ascending colon While most of such cases are relieved by medical means, a few require surgical fixation

Surgical fixation of the ascending colon should be extended to the suspension of first portion of the transverse colon by the omentum, for purpose of preventing harmful angulation at the hepatic flexure

4 Some cases of persistent stomach trouble are due to the weight of a distended mobile cecum dragging on the third portion of the duodenum, and are relieved by anchoring the ascending colon and suspending the first half of the transverse colon

789 Glisan Street

ABSTRACT OF DISCUSSION

Dr Max Einhorn, New York I am glad that Dr Coffey does not commend these operations for enteroptosis From my experience in enteroptosis, which extends probably over a period of twenty-seven years, I would say that I have not yet seen cases in which an operation was distinctly imperative Enteroptosis, as such, does not demand surgical intervention Enteroptosis itself is not of such great consequence nor does it interfere in such degree with the well being of the patients, and we can always do something to relieve them of their symptoms

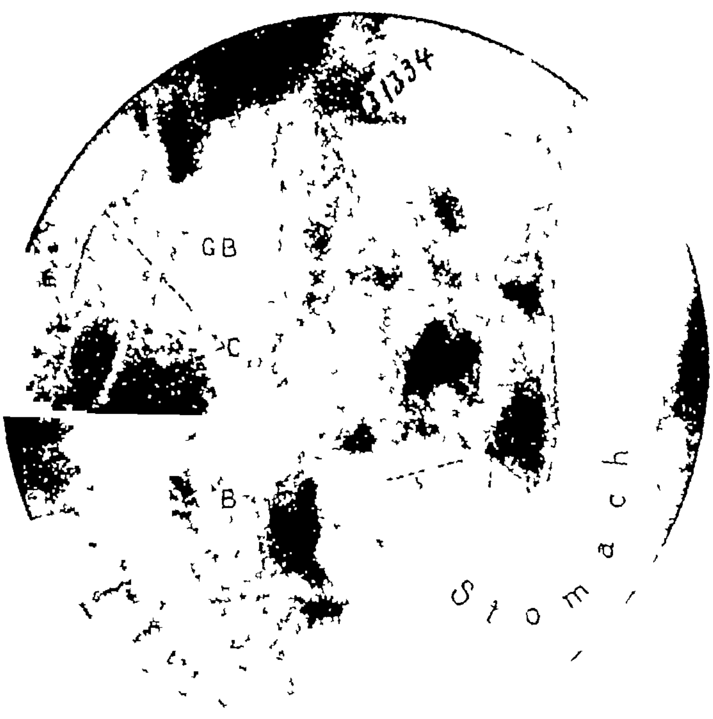
It is impossible to fasten each organ in the abdomen I think we should take it for granted that, having developed from quadrupeds and assumed a standing position, nature probably in the course of the development has already accomplished what we require, and we do not need to worry about it at all or try to imitate those quadrupeds I do not think they are any better off than we, so that if some organs are not entirely fixed in the abdomen that does not show that they are diseased or that we should change them A flexible organ can sometimes do its function very well, and if we try to change it we sometimes do harm That we should bear in mind when we want to interfere

As to the medical treatment of enteroptosis there are symptoms sometimes requiring correction, and one should try to build up the patient. A great many of these patients with enteroptosis suffer from bad nutrition They are afraid to eat, and owing to the lack of fat they have those symptoms If we make them eat and support the abdomen (sometimes such a support is not urgent and they can do without it) we pull the organs up and they improve and we bring about a change in the position of those organs, especially where the enteroptosis has developed after some sickness, the loosening up of the abdominal muscles through this added fat will do wonders If we build them up, with fat and muscles the organs very often go back of themselves to their natural positions So in these simple means of nourishing a patient we have our ideal remedy at hand to cure a great many of these patients without surgical intervention

Dr. Albert Goldspohn, Chicago While the previous speaker was speaking there occurred to me what has frequently been a paradox to me in the feeding question, namely, if these patients do not eat there is something wrong about their gastro-intestinal apparatus causing lack of appetite or fear of the distress which they would afterward realize. Now, if they are to be permitted to walk about on two feet and not be compelled to go on four, how is the physician to succeed in getting them to eat? And if they are crowded to eat more than they want, is there a proportionate increase in digestion and assimilation following forced feeding?

We all operate for floating kidney rather infrequently There is probably no operation that I do less frequently than that, and as Dr Coffey has said, simply fixing the kidney and ignoring the colon, especially when this is done by various uses of the fibrous capsule alone or chiefly, is extremely uncertain in its duration and very unsatisfactory in its results Dr Longyear, in suggesting the connection between the kidney and the colon, and speaking of his nephrocolonic ligament, made a step which leads us to think of a possible cause for this dissatisfaction, but I, like many other men, have not been able to trace that ligament. I know, however, that there is a united descent between the kidney and the ascending colon, that the colon is dislocated with the kidney, and I knew that before I had learned of Dr Coffey's explanation The technic which I have resorted to therefore, is chiefly that suggested by Dr Edward Andrews of Chicago, which consists in making a hammock back of and beneath the kidney out of the fatty capsule and making use of the fibrous capsule only as an adjunct or incidentally By drawing forward and upward the fatty capsule gathered together on both sides of the kidney, we raise the colon likewise if there is a connection between the two, and by fastening the capsule like the meat in a sandwich, between the muscles in closing the wound by mattress sutures, we can make a fixed and permanent anchorage This process in the operations that I have performed for floating kidney has been very satisfactory, and I think it coincides with the reasoning and the technic which Dr Coffey suggests I think it will be even better to do as he does enter the abdomen from behind and laterally and anchor the colon and then do this work as he does it on the kidney

Dr A N Creadick, Portland, Ore Dr Coffey's paper discussed one type of ptosis, namely, congenital, and not the acquired type such as we see in postpuerperal cases, with lost tone of the ventral abdominal wall, a flaccid lower abdomen and the resultant symptoms caused thereby Let us lay down two or three simple rules for ptosis that will meet with common approval First, ptosis is established when any supra-umbilical viscus is permanently and wholly below the level of the umbilicus, is then provocative of the usual course of symptoms and requires surgical intervention No remedy can be applied to this type except the prostrate position or surgical procedure—some such operation as this devised by Dr Coffey Second, the "acquired ptosis" patients have some hope in medical treatment of their general asthenic state The result of such medical treatment is very satisfactory in our hands A large number of patients are relieved by medical treatment alone Third, the factors which cause ptosis of the acquired type consist of (a) posture, the loss of the supporting shelf of the spinal column, which Dr Coffey describes as an angle of 55 degrees from the horizontal, (b) the tone of the musculature of the ventral abdominal wall and (c) subperitoneal fat In acquired ptosis the posture can be corrected by gymnastics, which also tone up the abdominal wall as well (I use the frame devised by Dr Martin of Chicago, elevating the foot to a window sill, securing an exaggerated Trendelenburg position, then requiring the patient to do regular leg exercises) Hot compresses on the abdomen and forced feeding are useful



Roentgenogram *A* carcinoma pyloric end of stomach *B* duodenum, *G*, *B* barium in gallbladder *C* barium in hepatic ducts

Dr. H O Pantzer, Indianapolis I proceed on a theory just the opposite of Dr Coffey's Instead of further fixing these organs for cure, I loosen all such angulations, kinks and distortions as interfere with function In other words, in effect, I choose rather to reestablish the old quadruped condition I may say that the clinical results are at least equally as satisfactory as those obtained by the fixation methods, which, too, in single cases, are not all we could wish for

Dr. R C Coffey, Portland, Ore. I never think of operating in these cases until the abdomen is black with blisters which the internist has produced with hot packs during forced-feeding process The first thing is to have the internist try them out My colleague Dr Jones has an institution devoted to the forced feeding treatment Occasionally there is a case that will not be relieved for mechanical reasons I know an internist in my city who claims, like Dr Einhorn, that he can cure them all, but I will say that many of the cases I get come through his hands

A great many of our best surgeons are inclined to call everything general ptosis Now Dr Creadick spoke of acquired ptosis There is the most definite ptosis seen in the abdomen The ascending and descending colon have blended in perfectly with the parietal peritoneum and remain in normal position, but the stomach and the middle of the transverse colon have dropped down This is the most troublesome type of ptosis It has nothing to do with the subject of my paper and the majority are cured with fattening Fattening will cure nearly all these cases by increasing the intra-abdominal pressure. The type we are discussing in the paper is an embryologic defect

ROENTGEN OBSERVATION OF THE GALLBLADDER AND HEPATIC DUCTS AFTER PERFORATION INTO THE DUODENUM

R D Carman, M D, Rochester, Minn

The roentgenologic demonstration of a barium-filled gallbladder in a living patient is sufficiently unusual to warrant its report So far as I am aware, no similar case confirmed by operation or necropsy has appeared in the Roentgen literature

The patient, a woman aged 54, had had a cholecystostomy for gallstones in January of this year, elsewhere She came to the Mayo Clinic May 22 In the scar of the operation wound were two sinuses, discharging pus, and surrounded by a movable, nodular mass The total acidity was 4, all combined, no food remnants Hemoglobin 80 per cent The clinical symptoms consisted chiefly of some hunger distress, belching and watery regurgitation

At the Roentgen examination no retention from the six-hour meal was found When the stomach was filled with the second meal, the pyloric end showed a smooth, concentric filling defect, giving the lumen a conical form, and typical of scirrhous carcinoma Far up in the right abdominal quadrant was a dense collection of barium with sprig-like branches (Fig 1) From its situation this was believed to be in the gallbladder, indicating a communication between it and the upper intestinal tract, which was reported to the clinicians in charge of the case The tendril-like branches were deemed to be due to the extension of barium into the hepatic ducts

At operation (E. H Beckman, June 28, 1915) the external sinuses were found to lead into a dense carcinomatous mass surrounding the gallbladder and involving the stomach By reason of its extent the cancer was not exsectable The gallbladder itself, which was excised, simply showed a chronic cholecystitis with particles of barium adherent to the mucosa The fundus of the gallbladder communicated with the duodenum through a perforation

At necropsy on the following day the perforation, which had been covered by the surgeon as well as possible, was found in the anterior wall of the first portion of the duodenum, toward the former site of the gallbladder Metastases were noted in the liver Some barium was seen in the hepatic ducts

Cooperation—Cooperating with an efficient health officer, physicians can make the efforts of the health department successful or their success impossible—Trask.

New Instruments and Suggestions

A PRACTICAL OPERATING MASK

Richmond Stephens M D, New York

The variety of caps and masks in use for covering the heads and faces of doctors and nurses in an operating room indicates that the ideal head protection has not been devised A mask or hood which completely covers the head is usually uncomfortable, while those that are comfortable do not protect the field of operation

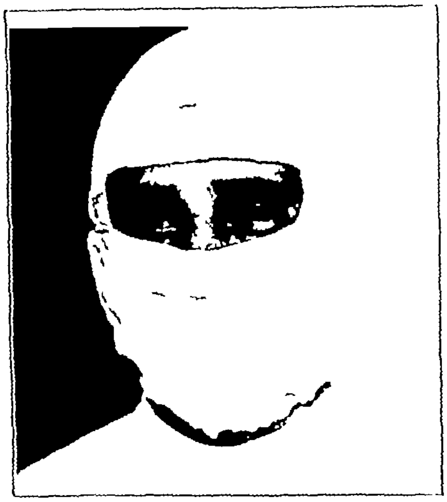


Fig 1 —Practical operating mask.

A hood is the proper head dressing for routine use, but there are serious objections to the hood usually employed It is made of muslin, and although not very heavy, is warm and interferes with free breathing When eye-glasses are worn, the glass often becomes clouded by the breath We have devised a hood which is more comfortable and satisfactory

1 A gauze window about 4 inches square is inserted in the front over the mouth and nose The window is made of two thicknesses of ordinary gauze.

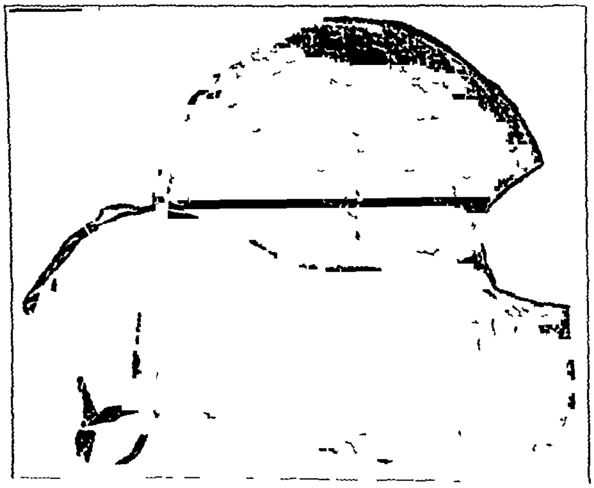


Fig 2 —Side view of mask.

2 Tapes from the corners of the eye-opening hold the mask tight across the nose and prevent it from slipping down The broad double attachment of the tapes prevents interference with vision by the approximation of the upper and lower edges of the eye-opening

3 A thin, fine mesh material known as Japanese nainsook is used for the body of the hood This is cool, and just as protective as muslin

The size of the mask must vary somewhat for different individuals yet a universal size may be employed which can be adjusted by means of the tapes to fit the head

A draw-string is provided at the bottom of the mask to tie around the neck

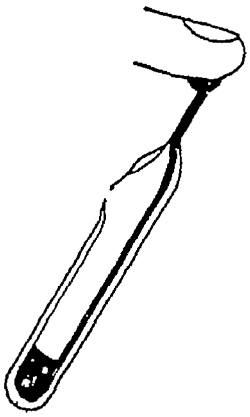
With reasonable care when coughing, talking, etc, it seems that the gauze is a sufficient filter of the air to protect the wound

Second Surgical Division, New York Hospital

AN EASILY FILLED CAPSULE FOR COLLECTING BLOOD

M W Lyon, Jr, Ph D, Washington, D C.

The ordinary Wright capsule requires considerable skill in filling The modified form illustrated here in sectional diagram can be readily filled by any one Sufficient serum for a Wassermann test is more readily obtained than by venipuncture in the hands of one who is not expert in the latter procedure. The capsule is made by closing one end of a piece of glass tubing and drawing out the other to a capillary point and closing the capillary end The air-tight tube is then held in the flame just below the origin of the capillary end until the heated and expanding air causes a bulging on one side, which finally ruptures with a "pop," leaving a small round hole After this the capillary end should be broken open In use blood flows into the capillary end and trickles down the side to the bottom of the tube, the enclosed air passing out the hole in the side The capsule is easily placed in a centrifuge and serum readily obtained without danger of breaking the tube.



Capsule for collecting blood

Sterile blood can be obtained by placing the capsule in a plugged test tube and heating in the hot air sterilizer The capillary end may be sealed in a flame after filling Sterile cotton over the side hole will permit air to pass out and prevent entrance of germs, or the unsealed capsule may be returned to the sterile test tube.

In calling attention to this easily filled capsule I wish to disclaim originality, as its use was shown me by a student who said it was employed in a laboratory at Asheville, N C It does not seem to be described in books dealing with technic.

George Washington University

AN IMPROVED STOMACH TUBE

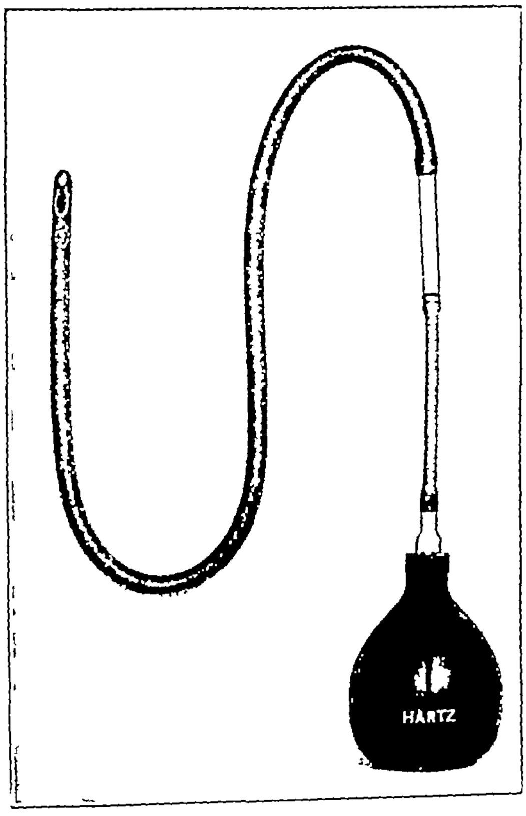
Charles D Aaron Sc D M D., Detroit

Professor of Gastro-Enterology Detroit College of Medicine and Surgery

The tube is made of soft rubber, but, though readily flexible is nevertheless rigid enough, owing to its size and the thickness of its walls, to avoid all danger of coiling or kinking in the pharynx or esophagus It is 84 cm (32 inches) long rounded and solid at its lower end, with two lateral openings one about 2 cm (three-fourths inch) from the end, the other just above it on the opposite side These openings run obliquely upward and have no sharp edges, the edges have been smoothed away in molding (velvet-catheter eye), so that traumatism or other injury to the mucous membrane from contact is impossible The openings are large, rendering aspiration of the stomach contents easy The lower end is made solid so that no particles of food can accumulate there, as frequently occurs in tubes with a terminal culdesac. The main distinguishing feature of this stomach tube is that the closed, smooth, rounded end contains a heavy piece of lead This weighted end facilitates the passage of the tube down the esophagus without any effort on the part of the patient Most patients regard the swallowing of a formidable-looking stomach tube as somewhat of an ordeal, but there is no need of swallowing or "gulping" when this tube is used

METHOD OF PROCEDURE IN ASPIRATING THE STOMACH CONTENTS

The patient should sit upright, with his head bent slightly forward and held absolutely motionless He is instructed to breathe slowly and regularly through the nose and to pay absolutely no attention to what is about to take place The physician, standing in front of the patient, dips the free end of the tube in cold water and passes it directly to the posterior pharyngeal wall, which guides it downward toward the entrance of the esophagus The weighted end carries the tube to the laryngopharyngeal opening, where it stops A gentle push on the tube is now all that is necessary to carry it over the cricoid cartilage down the esophagus into the stomach, provided there is no obstruction in the esophagus It is unnecessary to tell the patient to swallow, except in rare instances when the muscles of the neck contract spasmodically holding the tube tight Many times the tube passes so quickly into the stomach that it is advisable to move it backward and forward to irritate the throat and induce gagging, which greatly assists the aspiration process



Improved stomach tube.

Before passing the tube, I have the external end connected with an evacuating bulb by means of a short piece of glass tubing and a soft-rubber tube about 16 cm (6 inches) in length The bulb is then compressed, and a bend in the soft-rubber tube held with the thumb and finger of the left hand prevents it from filling with air As soon as the tube reaches the stomach, the soft-rubber connecting tube is released, and the bulb, recovering its natural expanded form, aspirates sufficient gastric contents for analytic purposes

Should lavage be desired, it can be readily and safely carried out with the tube and the evacuating bulb The food residue in the stomach is aspirated as completely as possible with the empty bulb, the bulb is then detached, filled with water, reattached and slowly compressed until all the water has been introduced into the stomach Then, by the mere act of releasing the pressure on the bulb, the water is withdrawn by aspiration from the stomach This procedure is repeated with a second bulbful, and as often as may be necessary, until the water returns perfectly clear It has been shown by Sawyer (Sawyer, John P Study of Methods of Lavage, Tr Am Gastro-Enterol Assn., 1914, p 146) that this method of lavage is far superior to any other

When the tube is not in use it should never be coiled, but laid out straight If this precaution is observed, the original shape of the tube will be maintained so that it will glide easily through the esophagus into the stomach as described

38 West Adams Avenue

A DIAGNOSTIC URETHRAL SOUND

FRANCIS J W MAGUIRE, B S, M D, DETROIT

This diagnostic sound is unlike the regular sound, since a short distance from the blunt point is an hour-glass-like constriction or neck (Fig 1) A similar constriction of the sound's diameter is located on the straight portion of the instrument. The strictures are easily felt by the operator as the hollows of the sound slip by them or hug the elevated points (Fig 2) Physicians with an "educated" tactile sense very soon become familiar with the jerky feeling, and with this instrument can tell the precise condition of the caliber of the entire urethral canal The sound is an ideal one in cases in which the lumen is small and very sensitive, inasmuch as its construction permits the use of instruments of very small caliber They are made at present in sizes 18, 21 and 24, French

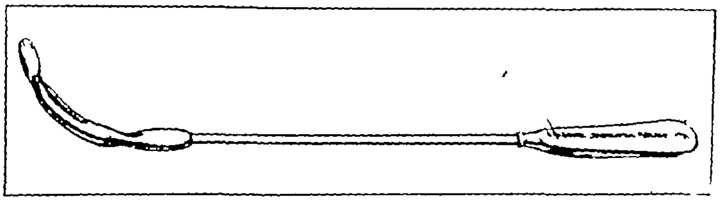


Fig 1 —The Maguire diagnostic sound for diagnosing single or multiple strictures of the male urethra Depressions or "necks" on the sound cause abrupt jerks as they pass the cicatrices, giving the operator a complete survey of the urethra

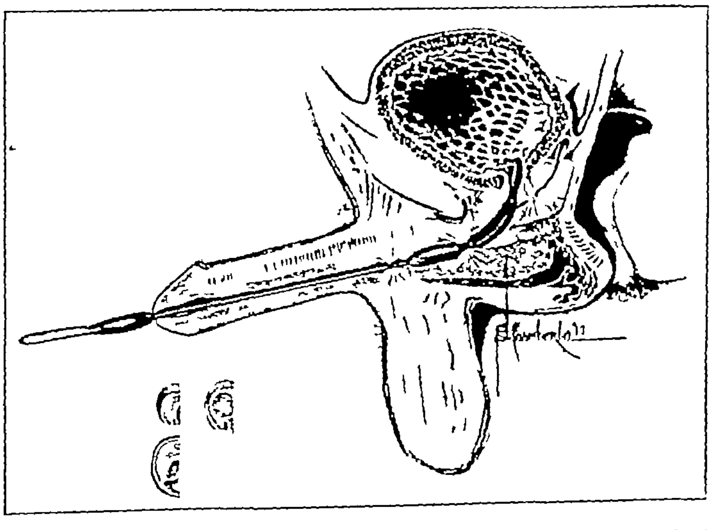


Fig 2 —The instrument in situ The posterior stricture is seen hugging a depression or neck in the sound

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Team Work in Disease Prevention—There is not a solitary line of preventive and constructive work in which we do not sooner or later run up against insufficiency of community work, of registration, of collaboration, and even of mere acquaintance of those who should work together Over and over again we become guilty of the common mistake of giving to every good worker a bigger field than can possibly be covered—Adolf Meyer

Therapeutics

THE MORPHIN HABIT

With the enforcement of the Harrison Narcotic Law the number of morphin habitues will rapidly diminish Illegitimate cases of this habit must soon either be cured or must become legitimate cases and sooner or later die of the disease on account of which the morphin is used The morphin habit may be termed legitimate when it is acquired by patients who are suffering from an incurable painful disease Such a habit may be life prolonging, e g, in cancer where there is pain, and in heart disease where there is cardiac dyspnea insomnia, etc Incidentally, cases of morphinism will probably always occasionally occur, but they should become less and less frequent Recurrent painful conditions should not be treated or prevented by morphin until every other resource has failed No physician in general practice can honestly say that morphin should never be given for asthma, for cardiac dyspnea, and sometimes for terrible headaches, associated with uncontrollable vomiting Of course, there is always danger that a few of such patients will ultimately acquire the morphin habit, and such patients will always furnish a small clientele for treatment to cure the habit At the present time there is a considerable number of patients who have acquired the habit of self-drugging by obtaining morphin after their physicians have supposed them cured of their desire for it Another group includes those who smoke or use opium Such patients may be termed illegitimate morphin habitues The following article will describe several methods for the treatment

THE EFFECT OF MORPHIN ON THE SYSTEM

The primary effect of morphin is too well understood to require more than a brief reference In the human being it stops pain, quiets the central nervous system, except in such patients as show an idiosyncrasy against it, causes sleep, if the dose is of fair size, inhibits all secretions, except at times that of the skin, slows up or inhibits digestion in the stomach, inhibits the peristalsis of the intestines, causing constipation, diminishes the absorption of nutritive or other fluids in the intestines, inhibits and hampers the activity of the liver, and soon of the pancreas, slows the heart, may increase blood pressure, unless the dose is a prostrating one, and of course slows the respiration A small dose may stimulate the central nervous system, especially the spinal cord, may cause the individual to become more talkative, and may cause him to appear more active mentally, although his judgment is not improved and may be impaired, as well as his self-control Sexual stimulation may occur and peripheral irritations may be ignored This action of small doses is what frequently occurs in morphin habitues when they take their ordinary dose In other words, the ordinary dose for them acts as a small dose for the individual who is not used to the drug

The patient who is not used to morphin may have nausea, vomiting, faintness, cardiac depression and subnormal temperature when the effects of an ordinary large dose are passing off The habitual user of morphin becomes nervous, irritable, depressed, is unable to concentrate for any physical or mental work, often has no appetite, may have loose bowels, and may have various other nervous disturbances such as an irregularly acting heart, cold, clammy hands, cough, hiccup, nausea, and various peripheral pains, all depending on the length of time he has gone without the drug

A considerable part of the drug is destroyed in the body by oxidation, probably in the liver and tissues, some is excreted with the urine, but a portion is excreted through the mucous membrane into the stomach and intestines, from which organs a part may be again absorbed Excretion commences soon after the ingestion of the drug, but continues for hours and sometimes for days after the last dose has been taken, if the patient has had several doses, or is a habitue

SYMPTOMS OF CHRONIC MORPHINISM

The morphin habitue may take his drug by inhaling the smoke from burning opium, or by taking it by the mouth, or by hypodermic injection The use of the hypodermic syringe has become more and more frequent in these patients, as they get the action of the morphin much more quickly by this method, and they have found that it does not so much upset the stomach and digestion The effect of the habitual use of morphin is primarily an insatiable desire for more and more frequent doses and for larger doses, in order for the individual to receive the same stimulation and the same sensations of comfort Sooner or later there is a weakening of the moral character so that the statements of the individual are entirely unreliable, and even when not directly under the influence of the drug he will not only tell plausible untruths, but also may relate peculiar and interesting stories of events that never occurred Later there is a weakening of the mentality, and absence of all desire for exertion, either mental or physical, the patient becomes irritable, is muscularly weak, and may show some tremors, the heart may act irregularly and become feeble, there is more or less impairment of digestion, with more or less concentrated urine, often showing bile and indican, and the mouth and skin may show a low grade of jaundice In other words, the patient is suffering a chronic toxemia from the action of the drug, morphin

If the dose of the drug is diminished or withdrawn the patient not only suffers the symptoms described above, but the pains may become almost intolerable, there is absolute insomnia, and the nervous irritability, excitement, and sometimes almost delirium may be succeeded by such a depression of spirits as to simulate melancholia Consequently, the treatment of the real morphin habit is always a serious proposition Patients may die while taking the treatment for the cure of their habit This does not mean that it is difficult to withdraw the drug gradually and completely, without the patient's knowledge, when it has been given temporarily for a short period to an acutely sick patient This can easily be done by the careful physician almost without the patient's knowledge, either by a gradual withdrawal of the drug or by substituting temporarily some other narcotic or hypnotic

While there is not now the danger of writing a prescription containing opium, morphin, codein or heroin, lest it be repeated by the patient unknown to the physician, that there was before the Harrison law went into effect, still it is usually unwise for the patient to know that he is receiving a narcotic of this series The physician may give personally to the patient the dose of the drug that he is to use

METHODS OF TREATMENT

The choice of the method of treatment for the morphin habit is of great importance The treatment which will cure the habit most quickly, which is the least dangerous, and which will afford the patient the greatest comfort during the period of his craving for the morphin should be the one of choice This is not to declare that there may not be several treatments, varying slightly in their application, that may fill these requirements

The treatment of an individual addicted to the use of opium or morphin should not be attempted unless the physician is certain that the patient is absolutely under his care and that his directions will be carried out in the minutest detail With a reliable nurse, treatment may be attempted in a patient's home, but it is not often advisable If a patient is to be treated at home, the physician should remember that he may become delirious, not only from the withdrawal of the morphin, but from any one of the atropin treatments, and that he might injure himself, or might jump out of a window in order to escape and obtain, if possible, what he thinks he needs Also, the convalescence of these patients, like hysteria, is better treated at an institution In fact, it should be stated that generally better results are obtained in an institution for the treatment of this habit, or in a public or private hospital The physician should exercise the greatest patience, and should show that he has sympathy for his patient during his mental and physical trial At the same time the physician should be firm in carrying out the details of the treatment He should also in every way encourage the patient to exercise his own will-power in controlling the symptoms, and later in refraining from the use of the drug

SOME OF THE SPECIAL TREATMENTS OF THE MORPHIN HABIT

1 *The Towns-Lambert Treatment* —Mr Charles B Towns, a layman, discovered and offered a treatment for the morphin and alcohol habit in 1904, at which time however, he did not explain the ingredients of the preparation that he used Later, in 1909, he did explain this treatment to Dr Alexander Lambert of New York, who tried it, and described it in The Journal, Sept 25, 1909 Subsequent articles have been published by Lambert and others The treatment consists of the administration of mercury in the form of compound cathartic pills, and of blue mass, to produce free catharsis and relieve the congestion and inactivity of the liver The other medicinal treatment is a mixture as follows

℞		
	Tincture of belladonna	2 fluidrams
	Fluidextract of xanthoxylum	
	Fluidextract of hyoscyamus	each 1 fluidounce

Mix.

A 15 per cent tincture of belladonna should be used, not the official 10 per cent tincture

2 *The Pettey Treatment* —Dr George E Pettey (of Memphis, Tenn) also causes catharsis, and has the patient drink large amounts of water to dilute the body fluids, and to cause watery movements and a large amount of urine He gives his patient tub and vapor baths His cathartic combination is as follows

℞		
	Calomel	
	Powdered extract of cascara sagrada	each 10 grains
	Ipecac	1 grain
	Strychnin nitrate	¼ grain
	Atropin sulphate	1/60 grain

Mix, and make 4 capsules

His other medicinal treatment is scopolamin in 1/200-grain doses, spartein sulphate in 2-grain doses, and during the scopolamin treatment 20 grains of sodium thiosulphate every two hours for twenty-four hours or more

3 *The Sceleth Treatment* —This treatment is advocated by Dr Charles E Sceleth, who is medical superintendent of the Sceleth Emergency Hospital and of the Hospital of the House of Correction in Chicago In these institutions the majority of the cases of drug addiction in Chicago are treated The treatment (The Journal, March 13, 1915, p 927) consists of saline cathartics and the following combination

℞		
	Scopolamin hydrobromid	1/100 grain
	Pilocarpin hydrobromid	1/12 grain
	Ethyl-morphin hydrochlorid	½ grain
	Fluidextract cascara sagrada	15 minims
	Alcohol	35 minims
	Water q s ad	1 fluidram

The dose of the foregoing is varied according to the amount of morphin taken

All final treatments of the convalescence must aim to build up the physical condition, occupy the mind of the patient, and stimulate and encourage his self-control

THE OBJECTS OF TREATMENT

The objects aimed at in the treatment of the morphin habit are to eliminate the morphin that may be left over in different parts of the body, to stimulate the activity of all glands, and especially the liver to combat the narcotic by a physiologic antidote, while these objects are kept in view, to give the patient as much rest as possible, and to stimulate and support the heart and the circulation

Severe prostration must occur with almost any successful treatment The strongest opponent to chronic morphin poisoning is atropin in some form The Towns-Lambert treatment contains belladonna, which contains atropin, and hyoscyamus which contains atropin as well as scopolamin The Pettey treatment contains atropin and scopolamin The Sceleth treatment contains scopolamin Thus, each of these three treatments combats morphin with atropin, reduces the intake of morphin more or less rapidly, and in the meantime causes catharsis, practically to the limit of tolerance Just why these particular combinations should be more successful than any other combination, or than atropin given hypodermatically, is a question for careful investigation by those who are in charge of institutions for the treatment of morphinism

The exact physiologic activities of the drugs used are as follows

Tincture of Belladonna — This has no activity except that of atropin, and atropin stimulates the respiratory center, accelerates the heart, causes more or less contraction of the blood vessels, may raise the blood pressure, wakes up the brain, dries up all secretions, may cause flushing of the face, may cause parched lips and throat, dilates the pupils, and in poisonous doses causes serious tachycardia and respiratory paralysis

Fluidextract of Xanthoxylum—Xanthoxylum is a drug which is so little used and has so little standing that it is not mentioned by some of the best books on materia medica Others which mention this preparation state that it is seldom prescribed The only official preparation is the fluidextract

Xanthoxylum (prickly ash) contains a volatile oil which is irritant Since prickly ash was first used as a drug it has been recommended for various conditions, but has not been proved to have any special activity

It probably has some laxative properties, and may in small doses be a stomachic stimulant, while in large doses it would cause irritation of the stomach. Any diuretic, circulatory, or expectorant action, or any action on the nervous system is very doubtful. The question naturally arises, scientifically, if this drug in the Towns-Lambert mixture could not be replaced by some more rational preparation. In other words, it is not evident just why this atropin mixture is better when combined with prickly ash. One might almost wonder if xanthoxylum had not the same bearing in the mixture that the zodiacal sign over the Latin R at the beginning of the prescription is supposed to have — an invocation to the gods that the prescription will do good.

Fluidextract of Hyoscyamus.—Hyoscyamus (henbane) contains hyoscyamin, scopolamin and a small amount of atropin. Hyoscyamin and scopolamin are really atropins, and act more or less like atropin, with the following exceptions: Hyoscyamin, which is probably always more or less contaminated with atropin, is nearly twice as strong as atropin in its ability to paralyze peripheral mechanisms. While scopolamin resembles atropin in its action, it acts as a hypnotic, unless the patient has an idiosyncrasy against all atropins, when it will cause excitation and delirium. Scopolamin acts more strongly on the peripheral nerves than does atropin. Hyoscyamin can readily cause severe prostration. In large doses scopolamin can also cause severe prostration and collapse. The fluidextract of hyoscyamus contains only 0.075 per cent. of alkaloids. The dose is 0.2 c.c. (3 minims).

It will thus be seen that the action of the fluidextract of hyoscyamus, added to the action of the tincture of belladonna, will simply intensify the action of belladonna, with possibly a slight sedative effect from the very small amount of scopolamin contained in the fluidextract of hyoscyamus. Why, then, give both hyoscyamus and belladonna?

Compound Cathartic Pill.—It should be recalled that the compound cathartic pill which enters so largely into the Towns-Lambert treatment contains a mixture of cathartics, namely, colocynth, aloes, scammony, calomel, jalap and camboge. The united effect of these cathartics, especially when given in the large doses recommended and combined with blue mass, is very free purging. This causes a depletion of the portal system, a lessening of liver congestion, an increased excretion of more or less toxic bile, and secondarily a great relief to the kidneys, on account of less toxins being absorbed from the intestines, which must later be passed off by the kidneys. There can be no doubt also that such brisk, free purging must cause a purer blood, and one that is better able to remove toxins and the products of sluggish metabolism from all parts of the body, especially from the nervous system, in these morphin patients.

Once more let it be said that there is no peculiar, wonderful action in the old and ancient compound cathartic pill. It is quite probable that any other method which would thoroughly relieve the intestines and at the same time increase the excretion of bile would have the same beneficial effect.

Pettey's purgative combination consists of calomel, cascara sagrada, ipecac, strychnin and atropin. The action of these drugs is sufficiently understood to require no further elucidation. Ipecac will increase all secretions more or less, perhaps especially the intestinal secretions. The addition of atropin to the purgative prescription might be questioned, except that it is a fact that every successful treatment seems to require something of the atropin series. Also, atropin is known to stop the griping of cathartics by dulling the peripheral nerves and preventing intestinal spasm. On the other hand, the strychnin will increase normal intestinal peristalsis, which in morphin takers has become more or less decreased. The above-mentioned cathartic is aided later by castor oil or magnesium citrate. This cathartic treatment emphasizes the fact that catharsis is what is needed, and not necessarily any particular one or more cathartic drugs. Scopolamin and strychnin are added to his treatment.

Sodium Thiosulphas (Sodium Hyposulphite).—This is largely used externally, rarely internally, and has been used as a food preservative. There is no doubt that some other drug would serve Pettey's purpose as well, especially as this drug has not been shown to have any special beneficial physiologic activity.

Spartein.—This is a liquid alkaloid obtained from the broom plant, scoparius, and has been used in medicine in the form of crystalline salt, spartein sulphate. It is a nervous depressant, and especially a motor paralyzant. Earlier experimentation seemed to show that spartein could raise the arterial pressure as well as quicken the pulse rate. Clinically, however, it has been found that in small doses it has little or no action, and in large doses it may cause circulatory depression. It has been largely used in irregular or intermittent heart and in palpitation, but it has not stood careful clinical or hospital tests, and is now very rarely used in cardiac depression.

Sceleth combines the laxative cascara sagrada with his scopolamin, pilocarpin and ethyl-morphin hydrochlorid treatment.

Pilocarpin.—This is an antagonist to scopolamin, as it promotes all secretions, especially the secretion of the saliva, of the bronchial mucous membrane, and of the sweat. It also acts against the atropin series in causing contraction of the pupils. Unlike the atropins, it is never stimulant, is always depressant, and the secondary effect is that of prostration. A single dose of the pilocarpin salt, as the hydrochlorid, nitrate, and hydrobromid, is about 0.01 gram, or ⅙ of a grain.

Ethyl-Morphin Hydrochlorid (Dionin).—This is the hydrochlorid of ethyl ester of morphin, that is, a morphin derivative, and the action is more or less closely like that of morphin, with a possibility that its secondary effects are more depressant. Sceleth in his treatment also uses strychnin.

These three treatments are all atropin treatments, with free purging, and the more or less gradual withdrawal of the drug, with a subsequent building up of the general system and a development in the patient of self-control.

The drugs used in these systems of treatment are not here criticized from an unfriendly standpoint, but to stimulate, if possible, a more careful study of the condition of morphinism in institutions that do not blindly follow one orthodox method. There is no halo, and there is no zodiacal sign, and there is no one prayer, that necessarily accompanies these particular combinations of drugs. It is largely the forcefulness of the men who carry out the treatment and the persistency in obtaining the object aimed at through some antagonistic drugs, profuse purging, and support of the patient through his trial.

(To be continued)

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STUDIES OF PELLAGRA

The zeist theory of the origin of pellagra is not yet entirely abandoned, and some students of the subject are still endeavoring to connect the incidence of pellagra with some factor related to maize, or Indian corn, in the diet At the present moment, however, a greater interest centers in the broader hypothesis that pellagra is due to some communicable factor and should be placed in the category related to that of infectious disease The Thompson-McFadden Pellagra Commission[1] has stated that its efforts to discover the essential pellagra-producing food or the essential pellagra-preventing food have not been crowned with success Their evidence suggests that neither substance exists in the population studied by them Hence they have been inclined to postulate a communicable agency in the etiology of pellagra

Within a few days, Goldberger of the U S Public Health Service and his associates have announced the experimental causation of pellagra in a group of human beings, as well as the cure and prevention of the disease among three groups of persons widely separated from each other geographically[2] As a result of epidemiologic studies, Goldberger had concluded in effect that pellagra is not a communicable disease, that it is dependent on some as yet undetermined fault in a diet in which the animal or leguminous vegetable component is disproportionately large, and that no pellagra develops in those who consume a mixed well-balanced and varied diet[3] Having already observed the benefits of dietary treatment prescribed by Lorenz and others,[4] Goldberger and his associates began a series of feeding experiments to confirm their epidemiologic findings

The first series of these to cure and prevent pellagra were undertaken at two orphanages in southern Mississippi During the spring and summer and up to September 15, 1914, there had occurred at one of these institutions seventy-nine cases of the disease among a total population of about 200 inmates and employees, and at the other 130 cases among a total of about 220 inmates and employees September 15, the diet at both institutions was supplemented by a very decided increase in the proportion of the fresh animal and leguminous protein foods This increased diet has been continued to date, a period of about fourteen months Of these cases, sixty-seven in the first institution and 105 in the second institution were continued under observation by the investigators for more than one year, and in only one case was there evidence of the recurrence of the disease, following the change in diet mentioned Among the residents of these orphanages who had not had pellagra in 1914, a total of ninety-nine and sixty-nine, respectively, none developed the disease subsequently In other words, in these two institutions, with a total population of approximately 420, almost 50 per cent of whom had pellagra in 1914, the disease entirely disappeared, following the use of the supplemented diet, and in only one case has there been a recurrence

In the second experiment, undertaken in December, 1914, in the Georgia State Sanitarium, about forty white and forty colored insane adults who had had pellagra in 1914 were placed in separate wards, and the diet supplemented, and special care taken in supervising the feeding At the beginning, many of these patients presented "marked residuals" of their attacks Of the pellagrins mentioned, seventy-two have remained under observation to date Of the thirty-six colored patients, eight had given histories of at least two annual attacks, and of the thirty-six white patients, ten had given histories of at least two annual attacks None of the seventy-two patients have had recurrence this year During the same period, not less than fifteen of thirty-two control female pellagrins developed recurrences In all the institutions, except for diet, the hygienic and sanitary conditions were unchanged From these experiments, it is evident that pellagra has not only been cured but also prevented by means of appropriate diet.

In order to test further the relation of diet to pellagra, however, Goldberger and Wheeler[2] undertook to produce the disease among convicts who had volunteered for this experiment on promise of a pardon The experiment was carried on at an isolated convict camp at which, beside the twelve volunteers, there were about seventy controls, twenty of whom were kept under special medical surveillance throughout the period of the experiment, that is, from Feb 4 to Oct 31, 1915 There had been no history of pellagra at this camp These volunteers were strictly segregated and kept under guard night and day From February 14 to April 19 no change of diet was made, and on careful routine examination, no evidences of pellagra were detected At noon on the latter date, the diet was changed, the quantities of the different articles of food comprising it during a sample week (August 2-8) being as follows

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[1] Siler, J F, Garrison, P E, and McNeal, W J Further Studies of the Thompson McFadden Pellagra Commission, a Summary of the Second Progress Report, The Journal A M A, Sept. 28, 1914, p 1090

[2] Goldberger, Joseph, Waring, C H and Willets, D G The Prevention of Pellagra A Test of Diet Among Institutional Inmates Pub Health Rep, Oct. 22, 1915, p 3117 Goldberger Joseph, and Wheeler, G A Experimental Pellagra in the Human Subject Brought About by a Restricted Diet, ibid, Nov 12, 1915, p 3336

[3] Goldberger, Joseph, Waring, C H, and Willets, D G The Treatment and Prevention of Pellagra, Pub Health Rep, Oct. 23, 1914, p 2821

[4] Lorenz, W F The Treatment of Pellagra Clinical Notes on Pellagrins Receiving an Excessive Diet, Pub Health Rep, Sept 11, 1914, p 2357

Biscuits, 41 81 pounds, corn bread, 24 56 pounds, grits, 27 06 pounds, rice 24 25 pounds, fried mush, 33 87 pounds, brown gravy 37 81 pounds, sweet potatoes, 23 62 pounds, cabbage, 4.25 pounds, collards, 23 75 pounds, cane syrup, 5 94 pounds, making a total of 255 67 pounds of food consumed during the week, or 3 32 pounds per man per day having a caloric value of 2,952 calories per man per day The sugar was white granulated the syrup a 'homemade" cane syrup No vegetable fats entered into the diet The corn meal and grits were of the best quality obtainable in the local market and the same as used at one of the orphanages ('M J"), Jackson, Miss, at which a feeding experiment to prevent pellagra was conducted and at which no pellagra occurred this year

The general sanitary environment of the volunteers and controls was the same but the personal cleanliness and freedom from insects and vermin were in favor of the volunteers Of eleven volunteers who completed the experiment (one was released because of prostatitis), six developed symptoms, including a "typical" dermatitis justifying a diagnosis of pellagra The nervous and gastro-intestinal symptoms were mild, but distinct In all six, the skin manifestations were first detected on the scrotum, in two subsequently on the backs of the hands, and one on the back of the neck

These positive experiments demonstrate that pellagra is a nutritional disease, but they do not single out any particular article of food From these studies, and observations in other places, it is unlikely that any single article of food will be incriminated, for the "grits" which entered into the diet of the convicts who developed pellagra also entered into the diet of the children of one of the orphanages who entirely escaped the disease Moreover, in Nairobi, where 119 cases have been reported, no maize had been raised, and "none had ever been brought into the country"

A statistician of the Public Health Service[5] has suggested a possible relation of the incidence of pellagra to certain conditions of an economic character His industrial investigations show that the lower the economic status of the white American family, the greater is the pressure for sacrifices in diet, particularly in animal protein foods, since these are the most expensive The economic status of wage earners' families in the Southern states, particularly of cotton mill families, is lower than that of wage earners' families in other sections of the country Certain factors have tended to restrict the supply of protein foods in southern industrial localities that do not restrict, at least to the same extent, the supply of carbohydrates and fat Budgetary studies of a large number of native white wage earners' families, generally comparable as to family income and size, indicate that the proportion of proteins in the diet of southern families is considerably less, and of carbohydrates and fat considerably greater than in the diet of northern families Certain factors have tended to intensify this condition in recent years, particularly since the industrial depression began in the latter part of 1907 While the supply of a better balanced diet in southern industrial localities has apparently not been improved materially, the economic status of wage earners' families, especially in the cotton goods and lumber industries, has been lowered, and retail prices of foods have greatly increased, this increase being more pronounced, particularly since 1907, than in other sections of the country The increase in retail food prices has been at least 40 per cent higher for proteins than for carbohydrates or fat The available data thus point to a lessened financial ability of southern wage earners' families to provide a properly balanced diet, as well as a decrease in the availability (measured by retail prices) of an animal protein food supply for the wage working population, particularly since about 1907 or 1908 Incidentally they tend to support the view that pellagra may be a deficiency disease, as are beriberi and scurvy, which have so often been discussed in relation to it

It remains, therefore, to determine by further dietary and laboratory studies, which will of necessity be of a highly technical nature, the deficient or disproportionate elements in diet responsible for this disease Judging by the advancements recently made, the problem will be eventually solved In the meantime, there is available a practical means of prevention and cure, and to Goldberger and his associates great credit is due for their work In view of the increasing prevalence of pellagra, and the fact that over 7,500 people in the United States will die of the disease during the present calendar year, the value of their studies from both public health and economic standpoints may be compared to those of the discovery of the relation of diet to beriberi, or the mosquito to the transmission of yellow fever

TOBACCO AND THE HEART

The question of the effects of tobacco on the heart is an old one, and has often been discussed The phrase "tobacco heart" has become a commonplace not only with the profession but also with the laity Yet the amount of accurate information on this subject is still meager This is not surprising, however, for all investigations have at least this in common they show what a great number and variety of factors may be involved There is indubitable evidence that the use of tobacco causes changes in the caliber of the blood vessels, there may be a constriction or a dilatation The former, leading to a rise of blood pressure, is the more characteristic effect Changes in the blood vessels react on the heart It is widely held by clinicians that nicotin (and the effects of tobacco are probably chiefly nicotin effects) has a special action on the coronary arteries, to this is usually attributed the angina-like attacks frequently seen in excessive smokers Sensory disturbances of obscure origin, but referred to the heart, are among the most pronounced symptoms of the "tobacco heart"

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[5] Sydenstricker Edgar The Prevalence of Pellagra Its Possible Relation to the Rise in the Cost of Food Pub Health Rep Oct. 22 1 15 p 3132

Recently, special attention has been devoted to the disturbances of the rhythm of the heart, use being made of the newer methods of studying these to which attention was recently called[1] Such studies have been made on both man and the lower animals The latter studies are in some respects of special importance, for it is only under experimental conditions, which can be controlled, that results capable of clear interpretation can be expected in such complex conditions as are evidently present Although in animal experiments extreme, obviously "toxic," effects are frequently studied, effects which can rarely be anticipated in man, the fundamental and possible actions of a drug are often most clearly seen in such experiments It is unsafe, however, to predict that what seem to be extreme conditions in animal experiments will not be found in man An interesting illustration of this is seen in the discovery of the condition of auricular fibrillation now recognized as of very frequent occurrence in heart disease Fibrillation of the auricles was produced in dogs by Cushny, and its effects on the pulse described, Cushny and Edmunds described a case in man in which a very similar pulse occurred, and suggested that in man, too, auricular fibrillation may occur—a suggestion received with incredulity, but soon found to be amply justified

It has long been known that nicotin acts on the heart chiefly through the nerves, the vagus and the sympathetic or accelerators The chief action is exerted on the ganglion cells interposed in the course of these nerves between the central nervous system and their endings in the heart These ganglion cells, like all others belonging to the autonomic nervous system, are first stimulated and then depressed by nicotin Since these nerves are antagonists and since, also, both are in a condition of tonic activity, the vagus tending to slow and the sympathetic to accelerate the heart so that the usual rate of this organ is the resultant of these two actions, it is evident that if the activity of these nerves is either increased or diminished, several results are conceivable Thus a slowing of the heart may result from stimulation of the vagus or from paralysis of the accelerators, an increased rate may result from either a paralysis of the vagus or from a stimulation of the accelerators The sequence in which the nerves are affected by nicotin and the response of the heart (depending on its condition) determine the end-result the heart may be slowed, accelerated or the rate remain practically the same All of these effects have been seen in both animals and man in nicotin poisoning A maximum acceleration occurs if the stimulation of the accelerators coincides with the paralysis of the vagi

Clinically, however, irregularities of the heart accompanying the excessive use of tobacco have attracted more attention than changes in rate Many of these irregularities have recently been traced back, in part at least, to changes in the activities of these nerves, for these nerves influence not only the rate of the heart but also the conduction of impulses from one part to another and, further, the ability of different parts of the heart to take up a spontaneous rhythm

Thus stimulation of the vagus delays the conduction of impulses from auricle to ventricle, causing partial heart block, stimulation of the accelerators facilitates the conduction of such impulses, paralysis of the accelerators delays the conduction and so may contribute to the appearance of a heart block, especially if the vagus is in a condition of increased activity Increased activity of the accelerators facilitates the process of stimulus formation, and so may lead to the appearance of extrasystoles The action of the vagus is exerted primarily on the auricle and the upper part of the tissue connecting auricle and ventricle, it has little direct action on the ventricle The accelerators influence the ventricles as much as they do the auricles, if not more, and thus the simultaneous stimulation of a vagus and the accelerators may lead to a condition of ventricular tachycardia, that is, a condition in which the ventricles are beating at a rapid rate entirely independent of the auricles

By the use of graphic methods, including that of the electrocardiograph, Pozzi and Clerc,[2] and Bull, Clerc and Pozzi[3] have observed in dogs under the influence of nicotin a great variety of cardiac irregularities identical with those which result from stimulation of the cardiac nerves, either singly or together or from stimulation of the one and paralysis of the other Among the effects noted were simple bradycardia (with normal rhythm) probably due to the action of the vagus on the sino-auricular node, incomplete or complete heart block probably due to disturbances of conduction (vagus effect) combined with accelerator or muscle action, a shortening of the interval between the contraction of auricle and ventricle, and finally an auriculoventricular rhythm such as may be obtained by stimulation of the accelerators and, under some conditions of the vagus, the appearance of extrasystoles of various origins, marked acceleration, and a retrograde rhythm in which the auricular follow the ventricular beats

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[1] The Rhythm of the Heart, The Journal A M A, Oct 23 1915, p 1462

[2] Pozzi and Clerc Jour phys. et path gen, 1913 xv 1

[3] Bull, Clerc and Pozzi Bull Soc de biol, 1914, lxxvii, 213

As yet only a few of these effects have been described in man after the excessive use of tobacco, but bradycardia, tachycardia and the appearance of extrasystoles have been noted These animal experiments, however, may help in the interpretation of symptoms already known and indicate what other symptoms may be expected All of these nervous disturbances of rhythm from nicotin seem to be purely functional, and to disappear on the discontinuance of the drug

SOME INTERRELATIONS OF DIET AND MILK PRODUCTION

Since the advent of our present-day knowledge of nutrition, it can no longer be believed that the proteins of the body fluids and tissues are merely replicas, so to speak, of the albuminous substances which enter into the diet There may be a wide divergence in the chemical make-up of the food and body proteins, respectively, a fact which led to the statement, widely quoted in the lay press a few years ago, that cannibalism is theoretically an ideal mode of nutrition The remark was, of course, originally intended to indicate that any scheme of diet which would supply the nutrient units—the amino-acids in the case of proteins—most nearly in the quantities and proportions in which they are to be used or deposited in the body, approaches the theoretically correct ration Precisely so, one could most easily build a Gothic cathedral by demolishing carefully a structure of this type and using the building material thus acquired for the reconstruction of a new edifice

The investigations of Abderhalden, Osborne, Mendel, McCollum and others[1] have given unmistakable evidence that individual proteins from different natural sources in the plant or animal kingdom have unlike efficiency in the nutritive functions This is particularly conspicuous in the case of growth, for which some of the isolated proteins seem to lack essential constructive units The recent studies carried on in this country, notably by Osborne, Mendel, McCollum and their co-workers, have aimed to ascertain what amino-acid groups are really indispensable for growth or maintenance, so that it may be known to what extent they must be provided for in any adequate dietary We have already pointed out that so long as the constructive capacity of the body is largely unknown and this field of investigation remains open to further research, the safe guide in nutrition will direct us to the use of a liberal mixed diet, in which the law of chance makes the serious lack of any essential diet component less likely

The production of milk calls for unique metabolic performances in which the production of protein is involved In the case of a lactating individual, this participation of the mammary glands in the need of suitable food is far from negligible The occurrence of lactose, special proteins like casein and lactalbumin, and the lower fatty acids in milk leaves little doubt that the function of milk production involves special constructive powers It might be assumed, therefore, that despite the dependence of a growing organism on a suitable kind or variety of protein to secure perfect growth at a normal rate, the mammary gland is independent, to a larger degree, of the kind of protein in the diet Synthesis might play a larger part in this structure

Experiment alone can answer the inquiry here raised regarding the possible extent of special synthetic power for the formation of amino-acids needed to elaborate milk It has long been known that the nature of the milk proteins is not altered by the character of the maternal diet, however much the volume of milk flow may be modified Hart and Humphrey,[2] of the Wisconsin Agricultural Experiment Station, have examined the possible relation of the quality of proteins to milk production on cows By making the ration of successive periods of observation strictly comparable in respect to total quantity of protein, "nutritive ratio," that is, relation of protein calories to the total available energy intake, and amount of "roughage" fed, they were able to note the amount of milk protein produced at the expense of a given unit of food protein There was clearly a marked difference in the efficiency of the proteins from corn, wheat and milk, respectively, for continued milk production In the concentrations of corn and wheat proteins used, the body always lost nitrogen after feeding with rations containing these nutrients, whereas, a positive balance followed the use of the same amount of milk proteins in the diet Evidently the synthetic power of the mammary gland will not compensate for deficiencies in protein structure Under the special conditions imposed in the Wisconsin experiments, it was found that milk proteins had an efficiency for milk production and tissue restoration of about 60 per cent, while the corn and wheat grain proteins showed an efficiency of 40 and 36 per cent, respectively

As Hart and Humphrey express it, this opens up anew the problem of the protein requirements for milk production, which must be studied from the newer angle of protein structure They also point out the somewhat astonishing fact of the influence of the forces of milk secretion in maintaining a yield of milk at the expense of tissue protein Instead of finding a marked drop in the production of milk either in volume or concentration when their animals were fed on the relatively inefficient and insufficient corn or wheat ration, not only the flow but also the quality of the milk was maintained This was, of course, done at the expense of distintegrated body tissue

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[1] For a review of this subject consult Mendel, L. B Nutrition and Growth The Journal A M A May 8 1915 p 1539

[2] Hart E. B and Humphrey, G C. The Relation of the Quality of Proteins to Milk Production Jour Biol Chem 1915 xxi 239

These experiences do not apply so practically to the human subject, who enjoys a wider latitude of choice in diet Nevertheless, they give added support, if such is needed, to the desirability of including a liberal allowance of milk and milk products in the regimen of lactating women It is doubtless true that these individuals are not infrequently producing milk at the expense of their own tissues, when a more rational scheme of diet would insure gains instead of losses

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ATTEMPTING TO CRIPPLE THE FOOD AND DRUGS ACT

The federal Food and Drugs Act was passed in 1906 By one of its most important provisions a drug product may be declared misbranded, "the package or label of which shall bear any statement which shall be false or misleading in any particular" In due time, the interests affected attacked this portion of the law A "cancer cure" quack who had been sued by the government contended that the law did not apply to claims for the curative effects of medicine but only to claims regarding composition and source of origin The quack argued, in other words, that when Congress said "false or misleading in *any* particular" it really meant "false or misleading in *certain* particulars" When the case reached the Supreme Court of the United States the quack's contentions were upheld — in a divided opinion So badly crippled was the Food and Drugs Act by this decision of the Supreme Court that the president sent a message to Congress urging an amendment to the law so that it might be restored to its previous efficiency In his message the president said

> "I fear that if no remedial legislation be granted at this session the good which has already been accomplished in regard to these nostrums will be undone, and the people of the country will be deprived of a powerful safeguard against dangerous fraud"

As a result of this message the Sherley amendment was passed This amendment declares that a drug shall be deemed misbranded

> " if its package or label shall bear or contain any statement, design or device regarding the curative or therapeutic effect of such article, or any of the ingredients or substances therein, which is false and *fraudulent.*"

While the amendment did not give to the law the strength that might have been given, it gave the public some measure of protection against those who would swindle the sick Naturally, the amendment was — and is — viewed with disfavor by the "patent medicine" fraternity, and it was bound to be only a matter of time before the exploiter of some fraudulent nostrum should attack the validity of the amendment This has finally been done As the original law was attacked by a "cancer cure" faker so the amendment is now being fought by a "consumption cure" promoter

"Eckman's Alterative," a fraudulent consumption cure, was "discovered" by a "horse doctor" It was examined in the Association's laboratory and a report published in The Journal[1] This, in effect, declared the stuff to consist, essentially, of alcohol and calcium chlorid, flavored with cloves Later the federal authorities made a seizure of this nostrum, declaring it misbranded because, among other things, it claimed to be a cure for consumption, "whereas in truth and in fact, said article of drugs would not cure tuberculosis or consumption" The company was found guilty and a decree of condemnation and forfeiture was entered[2] The concern thereupon carried up the matter on a writ of error and it is now before the Supreme Court of the United States

The Eckman concern raises a number of technical points in its attempt to justify the fraudulent business in which it is engaged These are described in a recent issue of the *Oil, Paint and Drug Reporter* One is said to be based on the fact that the claim made that Eckman's Alterative will "cure" consumption appeared, not on the label attached to the bottle, but on the circular around the bottle It is contended that as the contents of this circular did not become known to the purchaser until the package had been purchased by him and had left the realm of interstate commerce and entered that of domestic commerce, Congress could have no control over the wording of the circular By far the most important point raised, however, is that attacking the constitutionality of the Sherley amendment In its writ of error the company is said to allege that the Pure Food Law is unconstitutional, "in that it undertakes to regulate statements regarding the curative and therapeutic effect of the articles, which said statements are mere opinions which cannot be regulated by an act of Congress" Continuing further in this strain, the Eckman Company is quoted as saying

> " we want to call in question the power of Congress to prevent a person from making statements or claims concerning the virtue of drugs, whether modest or extravagant, and we say that an owner, when advertising his drugs has a right to exploit them and advance opinions concerning the curative properties thereof, notwithstanding the fact that such opinions may be objected to by others, and that he may make claims as to the result which will follow the use of his drugs which to some may appear unreasonable, because, in doing so, he is only doing that which the law gives him the right to do"

Moreover, this firm, engaged in one of the cruelest of the "patent medicine" frauds — that of selling an alleged cure for consumption — is said to declare

> " whether or not a person should be prosecuted for an offense or his property condemned, back of the prosecution

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[1] "Nostrums and Quackery," Ed 2, p 90 also a later article in The Journal A M. A., Nov 7, 1914

[2] Notice of Judgment No 2995, March 30, 1914, issued Aug 3, 1914

or back of the condemnation must be an offense or crime defined by law, not merely an offense that is to be determined by the state of public opinion or of scientific opinion"

The company apparently ignores the fact that the law has already made lying on the label an offense and that such a law was passed because public opinion has been aroused to the way in which the "poisoners of the public health" have, in the past, plied their wretched trade The argument that the curative properties of drugs are matters of opinion and, therefore, not subject to legislation was splendidly met by Justice Hughes of the United States Supreme Court, one of the three members of the court who dissented from the opinion that made the Sherley amendment necessary Said Justice Hughes

> "Granting the wide domain of opinion and allowing the broadest range to the conflict of medical views, there still remains a field in which statements as to curative properties are downright falsehoods and in no sense expressions of judgment."

This opinion must surely be held by all right-thinking persons who have given the subject any consideration

WOMEN PHYSICIANS AND THE WAR

The present war, in draining the belligerent countries of their male population, has naturally thrown unwonted responsibilities on women In various callings, positions from which women had previously been rigorously excluded, or to which they had been admitted only under protest, are now being thrown open, and women are eagerly invited to enter In the medical profession especially the demands of the military service have produced a deficiency in the supply of civilian practitioners which can be remedied only by utilizing the services of women physicians

Our London correspondent[1] reports that the medical journals in Great Britain are full of advertisements offering posts to women, and that the situation has become so acute that a large hospital sent an application to the secretary of the London School of Medicine for Women, "Send us *any* women at *any* salary" A daily newspaper also states, on the authority of the London School of Medicine for Women, that an infirmary post in the Whitechapel district, previously held only by a man at a salary of $500 a year and emoluments, is now advertised as open to a woman at $1,000 and emoluments This extreme demand for women, of course, cannot continue indefinitely after the close of the war Still, for many years after the cessation of hostilities, it will probably be literally impossible to fill all medical posts with men as exclusively as heretofore Not only will the medical staffs of the armies in the field return from the front with ranks thinned by the hazards and hardships of war, but also the younger generation of men physicians will be greatly depleted for a time by the fact that the young men who should now be acquiring a medical education are serving under the flag This prospect of a continuance of the demand for women physicians, at least for some years, has caused a marked increase in the numbers of women medical students[2] The registration in the London School of Medicine for Women has doubled Other British medical schools and hospitals are said to be considering the admission of women,[3] and one (Charing Cross Hospital), it is reported, has already opened its doors to women students[4]

In Germany, according to press reports, in spite of the absence of the customary numbers of American, Russian, English and Swiss women students, the enrolment of women medical students has risen from 874 to 1,150, and the entry of German women in the medical course has been greatly facilitated by a recent measure recognizing the diplomas of girls' schools as adequate entrance credentials throughout the empire

While at the close of the war men will tend to displace women physicians again to a greater or less extent, it may be taken for granted that the old order will never be reestablished in its entirety If there are fields of medical work for which women are entirely unfitted, the fact will have been demonstrated and they will be replaced as speedily as possible, but if there are posts which a competent woman may fill as well as a competent man (it is said, by the way, that even in the organization and administration of Red Cross units women have done excellent service), it will be impossible for conservatism any longer to deny all opportunity to women If there is any department of medicine to which women are especially adapted, that fact also will probably have been demonstrated on a larger scale than has hitherto been possible After the war, in short, there will be a readjustment accompanied by more or less friction, but European women physicians may undoubtedly look forward in the end to a fair field, from which old prejudices have been to a considerable degree eliminated by the pressure of necessity It will be interesting to see what use they make of their enlarged opportunities

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[1] Women Physicians and the War London Letter THE JOURNAL A M A Oct. 23 1915 p 1474

[2] The Opening of the Medical Schools London Letter THE JOURNAL A. M A Oct. 30 1915 p 1566 Walker Jane How is Medicine as a Profession for Women Affected by the War? Practitioner London September 1915 p 288

[3] Willey Florence E. War and Medical Education of Women Lancet, London Oct. 9 1915 p 802

[4] Modern Hospital, September 1915 p 150

Marriage of Tuberculous Persons—The supreme court of New York has decided in the case of Sobol vs Sobol that the marriage of a person suffering from tuberculosis might be annulled at the instance of the other party to the marriage when the existence of the disease had been concealed. The court decided that in view of the possible serious consequences of such a marriage to the wife, to the children if any were born and to the community the marriage contract should be annulled. The legal basis of the decision was the fraud of the defendant in concealing and misrepresenting the condition of his health—*Public Health Reports*

Current Comment

A MODEL BILL FOR HEALTH INSURANCE

A tentative draft of an act to provide for compulsory health insurance of wage earners appears in a pamphlet[1] just issued by the American Association for Labor Legislation This pamphlet, containing the thirty-page outline of a bill and an explanation of its provisions, embodies the results of three years' study by the social insurance committee of that association, which has been particularly fortunate in having the aid of the country's leading experts, including, among others, Miles M Dawson, actuary, and joint author of "Workingman's Insurance in Europe", Dr S S Goldwater, late commissioner of public health of the city of New York, Dr Alexander Lambert, chairman of the Judicial Council of the American Medical Association, and I M Rubinow, actuary, and author of "Social Insurance" This tentative draft provides that the cost of insurance is to be distributed among employers, employees and the state This will entail no new expense for the working man, since the contributions of the employer and the state will enable the working man to purchase the full benefits of the act for the same outlay he now makes for burial insurance alone The benefits included within the draft are medical care, nursing attendance, medical and surgical supplies for a limited period, cash payments during sickness for a maximum of twenty-six weeks in a year, special obstetric aid for the family, and a funeral benefit on the death of the insured To administer the benefits, employers and employees are to be grouped in mutual associations, supervised by the state and organized according to trade and locality It is anticipated that this method of organization, with the possibility of reducing insurance rates with an improvement in health and of cooperating with the public health authorities, will lead to an effective campaign for the conservation of health The committee has very wisely not attempted to outline the machinery necessary to organize and provide this medical care, because it considers that provisions so vitally affecting the medical profession can be worked out most advantageously by physicians themselves Since the pamphlet is published for the express purpose of drawing constructive criticism from the parties most interested, this is the time for the profession to express its preference The suggestions received will be used in preparing a bill for introduction into the legislatures of 1916 It is hoped that physicians will take advantage of this opportunity and state it will be possible to avoid that lack of coopera- etween the physicians and legislators which, for y marred some of the foreign legislation The nfluence legislation is when it is in a formative th t physicians will study this important and measeloping problem and help to work out an swindle the thod of furnishing medical care and relief and is — viev men, much dissatisfaction later on can be cine" fraternity, and, physicians failed to make them- of time before the ter the law was enacted

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[1] merican Association for Labor Legislation, New York

A SWINDLE IN AUTOMOBILE SUPPLIES

Have you been approached by a suave salesman who is willing to let you in on a ground floor proposition to obtain your automobile supplies at cost? If you haven't, you may be! He is abroad in the land, and physicians should look out for him They are his special "game" A certain "T A Buck" claims to be the representative of "the Auto Owners' Service Company of Toledo, Ohio," and offers for $10 a yellow paper certifying that the purchaser "is a member of the Auto Owners' Service Co, and shall receive all automobile accessories and supplies which he may purchase from the said company at cost f o b factory for one year" But the trouble is that neither the city nor telephone directory of Toledo contains the name of the concern or the name of T A Buck Further, owners of public garages and other concerns of Toledo that ought to know say that no such company exists in that city As one of our correspondents puts it, there have been "several dozen" of such companies in Toledo, "all of which border on the fraudulent" Toledo, however, is not the only city that has been honored as headquarters for concerns that offer to furnish automobile supplies at less than cost Physicians must be on the watch There are reliable concerns that furnish automobile supplies on favorable terms, but these, as a rule, do not have traveling men selling certificates of membership for cash In any event, if contracts are to be entered into, let the company send the bill in the regular way This will give time for investigation and cool thinking after the smooth-talking representative has departed, which is far better than doing the cool thinking after the cash has departed

THE RETIREMENT OF DR S S GOLDWATER

In a brief service of less than two years as commissioner of health of the city of New York, Dr S S Goldwater effected many important reforms which mark his tenure of office as unique in efficiency The current issue of the *Weekly Bulletin* of the New York City Department of Health lists these services as follows

1 Placing most of the important supervisory positions on a full-time basis, with a corresponding increase in the salary attaching to the positions

2 Establishing a bureau of public health education under a director chosen as the result of an open competitive examination, and insisting on education as an indispensable factor in public health administration

3 Establishing a division of industrial hygiene, thereby properly claiming as a health department function an important but hitherto neglected field of public health activity

4 Establishing a division of statistical research by readjustment of existing positions within the bureau of records

5 Revision of the sanitary code and formulation of a complete set of regulations thereunder

6 Advancing the work of school medical inspection by providing that private physicians may make the required physical examinations

7 Broadening the application of the dog muzzling ordinance and thereby reducing the prevalence of dog bites and the number of rabid animals in this city

8 Waging a persistent campaign against fraudulent patent medicines and securing the adoption of an ordinance provid-

ing that the names of the ingredients be printed on the label of all nostrums sold in this city

9 Providing for the regular annual physical examination of all employees of the department of health

10 Reorganizing the bureau of food and drugs and placing at its head a recognized authority in this field, chosen as the result of an open competitive examination

11 Inaugurating a campaign of education against the use of alcohol as a beverage

12 Insisting on the recognition as a menace to health of overcrowding in the street cars, and compelling the street railway companies to provide the service needed to the limit of their capacity

The Journal from time to time has commented on some of these enterprises Perhaps of greatest importance are those reforms listed under headings five and eight They represent widely different aspects of the work of a modern health department, but are evidence of the thoroughly scientific, yet at the same time intensely practical knowledge of his work possessed by the retiring commissioner Some of the reforms are distinctly novel, and yet the campaign of education against the use of alcohol and the recognition of overcrowding in street cars as a menace to health, all will agree, are distinctly problems within the scope of an adequate health service In conducting these activities, Dr Goldwater has not in any case exceeded the duties of an efficient health officer, but has demonstrated that the office may be filled to best advantage by a man of thorough scientific training, untiring zeal and uncompromising courage It is gratifying to learn that his successor, Dr Haven Emerson, "is in full accord with the aims and policies of the retiring commissioner "

EDWARD LIVINGSTON TRUDEAU

When Dr Edward Livingston Trudeau, whose death is announced in another column, himself a sufferer from tuberculosis, sought health in the Adirondack Mountains, in 1884, there were available in this country practically no provisions for the treatment and control of tuberculosis The establishment of the Adirondack Cottage Sanatorium at Saranac Lake in New York marked the erection of the first institution devoted to the fresh air treatment of tuberculosis and stimulated the movement for sanatoriums, hospitals and dispensaries devoted wholly to this disease Now, after thirty years, there are approximately 575 sanatoriums and hospitals with a capacity of 35,000 beds, 450 tuberculosis dispensaries, more than 1,000 physicians and over 4,000 nurses devoted wholly to the treatment and study of tuberculosis More than 400 open air schools attest the practicality and success of Trudeau's idea All are expressions of the influence of the Adirondack Cottage Sanatorium In connection with the sanatorium should be mentioned the work of the laboratory established by Trudeau at Saranac Lake During the last two decades monumental and important contributions to the study of tuberculosis, particularly the field of immunity, have emanated from this laboratory Under the guidance of Dr Trudeau, a number of men have studied at Saranac Lake, whose names today are of international importance in their relation to the study and control of this most dread disease There is something stimulating in the very idea of the fresh air treatment of tuberculosis There is something of the hero in the work of Trudeau, who, himself a sufferer from a wasting and fatal disease devoted a lifetime to the alleviation of the distress of fellow sufferers from tuberculosis Certainly, his name should endure as one who devoted himself, without hope of personal or pecuniary gain, to the proving of a principle of lasting benefit to mankind

SECTS IN MEDICINE—THEIR ABSURDITY

On another page[1] appears a statement regarding the action taken by the Ohio State Medical Board in its attempt to regulate the medical cults in Ohio under the new law The situation in that state furnishes an excellent illustration of the utter absurdity of the conditions which must result in any attempt to recognize by legislation the various medical cults which are continually springing up and demanding the right to practice medicine under lower educational standards than are required of physicians The fact that fourteen different cults are specifically mentioned in the Ohio law shows how ridiculous the situation has become Much confusion already exists in all but a few of the states in which there has been legislation recognizing sectarianism or cults The New York legislature, in 1907, recognizing the possibility of an endless number and variety of cults arising in the future, refused to recognize any, and provided a single license and the same educational qualification for all who desired to treat the sick Similar action has recently been taken by the New Hampshire legislature In other states the measures thus far provided as the result of the clamor of these cults have been compromises, they have resulted in lowering, to a greater or less extent, the minimum qualifications of those who are to practice the healing art, and to the same extent subjecting the public to the danger of ignorance and incompetence from those so licensed

SUBSCRIPTION SWINDLERS—ONCE MORE A WARNING

In the department of Queries and Minor Notes in this issue of The Journal appears again a warning against a fraudulent soliciting scheme twice previously mentioned in The Journal[1] Several letters have been received from physicians in New York and New Jersey, indicating that this form of subscription swindling is particularly active at this time The young man who works the scheme approaches physicians with the story that he is anxious to acquire a college education and that this may be obtained by securing subscriptions to various periodicals, which entitles him to a number of votes He then presents a subscription blank like the one reproduced in The Journal, October 23 Several forms are used under such headings as the "Cornell Educational Association," "Michigan Educational Association," the "National Society of Universities," etc We are trying our best to warn our readers regarding this particular scheme because it is one that appeals to the generous and philanthropic instincts of the average human being It is, therefore, the most contemptible type of swindle So far as The Journal is concerned, those representatives who are authorized to collect money carry a letter of authorization signed by the Editor and General Manager, bearing the seal of the Association and the signature of the agent

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[1] Medical Education The Journal A. M A this issue p 1838

[1] Cornell Education Association—A Warning General News The Journal A. M. A. Sept 4 1915 p 888 Subscription Swindlers Still at Work Oct. 23 1915 p 1472

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education, public health etc)

ILLINOIS

Personal—Dr J C Helper, Woodriver, who a month ago was afflicted with anthrax has been pronounced cured——Dr James M Postle, DeKalb, was severely injured in an automobile accident near Bartlett, November 4——Dr William S Howell, Winnebago, who has been ill for several months, is convalescent——Dr Eley E Perisho, Streator, was operated on for appendicitis in the Streator Hospital November 4——Dr Harriett B Ward, Elgin, is preparing to leave for Los Angeles where she expects to spend the winter and may make her home——Dr Auda Garrison, Galatia, fractured both bones of the right forearm while cranking his automobile, November 5

Warning Against Diphtheria—On November 12, Dr C St Clair Drake, secretary of the State Board of Health, declared that Illinois is threatened with one of the worst epidemics of diphtheria in the history of the state The disease has appeared simultaneously in every section of the state and its spread is greatly feared by the health authorities Dr Drake urges that quarantine be rigidly enforced, that no case of diphtheria be declared cured until examination of cultures from the throat prove negative, that all children exposed to the disease should have cultures taken, that the prophylactic use of antitoxin should be general, and that tests should be made to ascertain what members of the family are subject to the disease

Chicago

Personal—Dr Theodore B Sachs has been reappointed a member of the board of trustees of the Municipal Tuberculosis Sanatorium and continues as director of the institute——Dr Thomas A. Hogan has been appointed a member of the staff of the dispensary of the Municipal Tuberculosis Sanatorium

Typhoid Carriers Under Guard—The commissioner of health reports that he has three typhoid carriers under surveillance They will be guarded night and day by policemen as the County Hospital will not take patients against their will and as placing them in the Municipal Contagious Disease Hospital would expose them to the risk of other communicable diseases

Semicentennial of Hospital—The semicentennial of Mary Thompson Hospital for Women and Children was celebrated from November 16 to 20 On November 16 a public meeting was held in the rooms of the Chicago Woman's Club at which a history of the hospital was read by Miss Brayton and addresses were made by Mrs George Bass, president of the board of trustees, Mrs Ella Flagg Young, Dr Homer M Thomas and others On Wednesday a formal reception was given at the hospital at 6 p m, in honor of the graduate and pupil nurses of the Training School for Nurses of the hospital On Thursday evening a banquet was held at the LaSalle Hotel, and during the entire week special clinics were given by members of the staff at the Hospital, from 8 a m to 5 p m

INDIANA

Personal—Dr Marcus Ravdin, Evansville, who has been seriously ill with gastritis, is now convalescent——Dr Samuel A Shoemaker, Bluffton, started November 1 for a trip to the Pacific Coast, visiting en route many of the medical colleges of the West

Dispensary-University Trouble Settled—The Board of Health of Indianapolis and the Indiana University School of Medicine have come to a satisfactory settlement of the difficulties mentioned in the last issue of The Journal An agreement has been made whereby the college is allowed to use the City Hospital for clinical purposes and the city agrees to pay the college for conducting a free dispensary The board of health retains the power to appoint and discharge employees and in case of disagreement, the question will be decided by a committee of three composed of one member of the faculty of the college, one member of the board of health and a third to be selected by these two

IOWA

Health Survey Finished—The health survey which has been conducted by Dr Freeman of the United States Public Health Service in Dallas County has been completed In 500 homes which were revisited the owners or occupants had already made efforts to follow out the suggestions made on the occasion of the first visit

Home for County Society—Dr Archelaus G Field, Des Moines, has made a proposition to the Polk County Medical Society to provide the organization with a home Dr Field's offer is to allow his residence on Thirteenth Street to be appraised by a competent board and after the price is fixed agrees to donate a considerable part of the cost to the society

KANSAS

Public Health Nursing Association—The Public Health Nursing Association of Topeka now has nine nurses on its staff, one of whom is to be assigned to duty with patients suffering from communicable diseases

Personal—Dr Philip B Matz, Leavenworth, has been appointed physician to the Kansas Penitentiary, succeeding Dr James T Faulkner, resigned——Dr Walter S Sutton, Kansas City, has returned after service with the French Army——Dr Charles Hedinger, Canton, is still in the active practice of medicine although he has just celebrated his ninety-fourth birthday

MARYLAND

Meetings—A meeting of the Physicians' Civic Club was held November 11, at the Medical Library Building, for permanent organization and to listen to an address by Frederic C Howe, commissioner of immigration at New York——The permanent organization meeting of the Interstate Psychiatric Association will be held at the Sheppard and Enoch Pratt Hospital, at Towson, on November 23 A constitution has been drawn up and will be voted on at this meeting Addresses will be made by Dr Lewellys F Barker, Baltimore, and Dr Henry A Cotton, Trenton, N J

Pasteur Institute to Close—Announcement has been made that the work of the Pasteur Institute at Mercy Hospital, which is a department of the University of Maryland, is to be discontinued, and that the federal government will take up the work of the institute Patients desiring treatment will have to go to New York, Philadelphia or Washington until the government makes arrangements with the local health department for the distribution of the serum used in the treatment of hydrophobia Dr Nathaniel G Keirle, director of the institute, who has been in charge of the work for the past twenty years, will continue as professor of medical jurisprudence at the university

Academic Day—Academic Day was observed at the University of Maryland on November 11 At the celebration, the Provost, Dr Thomas Fell, announced that the university officials hope in a short time to acquire an endowment of a quarter of a million dollars at a very conservative estimate He further added that the outlook for making the University of Maryland the recognized state university by the next legislature was encouraging The event was the first since the merger of the university with the College of Physicians and Surgeons The three institutions now incorporated as the University of Maryland—the university proper St John's College and the College of Physicians and Surgeons—were represented

Personal—Dr Frederick Janney Smith, chief resident physician of the private medical wards at the Johns Hopkins Hospital, has resigned to become superintendent of the Henry Ford General Hospital in Detroit——Dr Ralph B Seem, lately in charge of the dispensary of Johns Hopkins

Hospital, has been made first assistant superintendent, to fill the vacancy caused by the resignation of Dr Karl H Van Norman ——Dr Lewis A Sexton has been promoted from admitting physician to the directorship of the dispensary, succeeding Dr Seem ——Dr Martin L Jarrett, Jarrettsville, is improving after undergoing an operation at St Joseph's Hospital ——A luncheon was given in honor of Dr Hugh H Young Baltimore by the Chamber of Commerce at San Antonio, Texas November 11 In the afternoon a reception was given in Dr Young's honor by the local chapter of the United Daughters of the Confederacy ——Dr John D Fiske Baltimore fell while boarding the steamship *Manhattan* at Canton November 4, sustaining painful injuries ——Dr William B Hunter Baltimore superintendent of Kernans' Hospital and Industrial School for Crippled Children, has resigned and will practice in Wilmington N C ——Dr Charles A Hellingsworth, Bel Air, is reported to be critically ill

MASSACHUSETTS

Mental Hygiene Exhibit.—A mental hygiene conference and exhibit was held in Ford Hall Boston November 17 to 19 under the auspices of the Massachusetts Society for Mental Hygiene

New Surgical Unit for War Service—The second Harvard surgical unit to carry on the work at a British base hospital which was inaugurated last spring under the charge of Dr E. A Nichols is rapidly being recruited All the nurses have been enrolled and many of the medical officers The unit will be in charge of Dr David Cheever, Jr, and Dr Wilfred Grenfell of Labrador was one of the first to volunteer

Problems of State Health—At the quarterly meeting which followed the meeting of the State Association of Boards of Health October 28, the present defects in the executive and financial operation of boards of health in large towns of the state, were discussed E A. Ingham Boston, claimed that an experienced medical man cannot be secured to serve on boards of health because of insufficient salaries and the many duties imposed on those who do serve Septic sore throat which has recently been added to the list of reportable diseases, was described by Dr Eugene R Kelley and Dr Francis P Denny Brookline advocated free hospital treatment for contagious diseases Prof W T Sedgwick of Harvard Medical School urged adequate training in the health service through conferences and courses of instruction The meeting was presided over by Dr Milton J Rosenau of Harvard Medical School

Personal.—Dr George C Shattuck of Harvard Medical School has returned from Serbia and at the University Club, November 4, gave an address on his experience there illustrated by stereoptican views ——Dr Charles A Keegan, Arlington was struck by an automobile in Nashway November 4 dislocating his shoulder, fracturing his nose and rendering him unconscious He is under treatment at St. Joseph s Hospital ——Dr Louise Taylor-Jones Boston, has returned from service in Serbia ——Dr Merrill Foote who has been on duty at Mrs Harry Payne Whitney's Hospital at Juilly France arrived home, October 5 ——Dr Hugh Barr Gray has been appointed superintendent and physician to the Washingtonian Home Boston succeeding Dr D A Ellsworth deceased ——Dr Alura A. C. Hughes has been placed in charge of the division of child hygiene of the Health Department of Boston ——Dr E Philip Lasky has been elected school physician of Haverhill, succeeding Dr Hugh Donahue, resigned.

MICHIGAN

Diseases Close Schools—The death of one child and the illness of several other children from infantile paralysis has caused the closing of the schools at Bentley ——Because of an epidemic of diphtheria the schools of Caro were closed for the week, November 2

Personal.—Dr Oscar LeSeure chief surgeon of Grace Hospital Detroit, since 1889 was the guest of honor at a dinner given by his medical friends November 12 at the Hotel Statler Dr Albert McMichael president of the Detroit School Board presided and about one hundred and twenty were present at the dinner ——Dr Frank B Marshall Muskegon fractured his arm while cranking his automobile, November 7 ——Dr Samuel E Barnhart Battle Creek, who has recently recovered from injuries received in an automobile accident at Whittier Calif expects to return to his duties by the first of next month ——Dr Bartlett H McMullen was elected mayor of Cadillac, November 2 —— Dr James W Inches St. Claire has gone abroad

MISSISSIPPI

Sanitary Survey—Dr J A Walter Bancroft, U S P H S has been making a sanitary survey of Forest County with the idea of instructing the inhabitants of the rural commmunities what to do to safeguard their health, happiness and homes

Society Favors Institution for Feebleminded—At a recent meeting of the Hinds-Rankin Medical Society in Jackson, a resolution was unanimously adopted memorializing the state legislature to take steps toward the establishment of a vocational institution for the care of the feebleminded of the state.

Tuberculosis Campaign Work—The Mississippi Antituberculosis Campaign Committee is endeavoring to secure funds for the establishment of a tuberculosis camp in Mississippi and has ordered one million Christmas seals which will be offered for sale in the state All the funds derived from the sale of the seals will go toward the establishment of the sanatorium

Pellagra Squad Pardoned—The twelve convicts at the Rankin State Prison Farm, who were selected as the pellagra squad to work out the theory of Surg Joseph Goldberger U S P H S that pellagra is produced by an unbalanced ration and can be cured by proper food, have been pardoned One was released because of physical breakdown and eleven who had completed the test which began February 15, received pardons, November 1

NEW YORK

Tuberculosis Notes—The proposition calling for an appropriation of $30 000 for the establishment of the Steuben County Tuberculosis Sanatorium has received a majority of nearly 3 000 votes ——The referendum in Jefferson County for a tuberculosis hospital was carried by a majority of 5 020 ——The tuberculosis camp maintained in Caton for the past four months for the Corning Social Service Society was closed October 28 With two exceptions the patients showed a decided improvement in health and strength as a result of their stay at the camp

Conference of Medical Inspectors—The annual fall conference of the New York State Association of Medical Inspectors and Physical Educators will be held November 23, at Rochester meeting as the Section on Hygiene and Physical Education of the New York State Teachers' Association The chairman of the section is Dr Clinton P McCord Albany The morning session will take up the subjects of attainment of correct posture, the physical aspects of school hygiene, defective vision among school children military training in public schools, hygiene of school buildings, and some aspects of nutrition of schoolchildren The afternoon program consists of an informal round-table discussion of the various aspects of physical training and school hygiene.

New York City

Dinner to Dr Goldwater—A testimonial dinner was given by the officials of the Department of Health to Dr Sigismund S Goldwater on Saturday evening, November 6, at the Hotel Savoy Dr William H Guilfoy, registrar acted as toastmaster On this occasion Dr Goldwater outlined his conception of a modern health department as one that would serve for the maintenance of good health rather than temporizing with attempts to cure ill health

Columbia Plans School for Health Officers—Plans have been prepared for a two-years course of study at Columbia University leading to the degree of doctor of science in sanitation Those taking the course must have the degree of M D or of C E in sanitary engineering or an equivalent degree It is stated that the teaching staff will be made up of members of the faculties of the schools of graduate engineering law medicine political science and pure science. The course will probably be offered for the academic year 1916-1917

Merger of City Department—The mayor and controller plan extensive reorganization of the city government along lines intended to promote economy and efficiency The first step will be to ask the legislature to revise the city charter combining into one organization the present health department department of charities and Bellevue and allied hospitals under the name of the Department of Social Service It is announced that the head of this department will be Dr Sigismund S Goldwater who recently resigned as head of the health department.

Occupational Diseases in Fur and Felt Shops—A report recently made by Dr Louis I Harris of the Health Department as to the sanitary and clinical conditions found in the fur and felt shops of this city shows that more than 1,000 employees were examined Among these 80 cases of chronic mercurial poisoning were found 65 cases of chronic pharyngitis, 95 of hypertrophic rhinitis, besides a number of cases of sore gums, tremors, tuberculosis, skin diseases, asthma, and anemia As a result of this, orders have been issued to seventy-one factories to install additional health protective devices, such as dustless fur-beating machinery, protective clothing, and hygienic floors

Mortality of Children of Alien Parents Lower than that of Native Population—The results of a study of the relative mortality of children of native and of foreign parents made by Dr William H Guilfoy of the Health Department has just been made public It shows that of every 1,000 children of native white parentage 44 boys and 35 girls do not reach their fifth year, whereas on the same basis 39 boys and 32 girls the offspring of foreigners die in early childhood The infant mortality figures are increased when the records of negro children are considered Among this class 112 males and 95 females out of every 1,000 die before the fifth year The better showing made by the children of alien parentage is attributed to the fact that foreign mothers are more likely to stay at home and look after their children than are native mothers, and also to the fact that the health authorities come into more personal contact with the foreign mothers

Anniversary Meeting of Academy—At the anniversary meeting of the New York Academy of Medicine, November 18, the topic of discussion for the evening was "Disease and Crime—An Analogy, Has Not the Time Come When Ethics, the Law and Medicine Should Join Hands to Form a Constructive Program Aiming to Do for Crime What Has Been Done for Disease Through Systematic Study and Classification, Leading up to Effective Measures of Prevention and Intelligent Individual Treatment?" The speakers were George W Wickersham, president of the Bar Association of New York who spoke on "The Concern of Society in the Problem of Crime", Warden Thomas Mott Osborn of Sing Sing Prison, who discussed "The Part Which Penal Institutions Might Be Made to Play in the Solution of the Problem", and Chief Justice Harry Olson of the Municipal Court of Chicago, whose topic was "The Progress That Has Been Made and What the Future Promises"

Report of Public Health Committee of Academy of Medicine—The public health committee of the New York Academy of Medicine has presented a summary of its activities since last May, among which may be noted the following They have studied the problem of drug addiction and find that in dealing with this problem there is a lack of constructive social policy, they recommend the development of the Farm Colony at Warwick so that cases of drug addiction may be admitted to it and adequately cared for and they also recommend changes in the present court procedure with reference to commitments and the establishment of a colony for female cases, and follow-up service for patients discharged from the Farm Colony, in order to guide them in securing employment and keep them from falling again into the conditions that were responsible for the development of their drug habit, in cooperation with the Municipal Civil Service corporation this committee has considered the proposed change in the qualifications for medical inspectors in the department of health and has endorsed the requirement of one year's experience in a hospital as intern as a condition of eligibility for medical inspectorship in the department of health, they urged the importance of oral tests in examination for medical positions, they have interested themselves in urging the transfer of quarantine from the state to federal control, in street cleaning, studying the relation of dust and dirt to mortality and morbidity, in studying, in cooperation with the American Museum of Safety, the effects of certain occupations on the health of those employed in such occupations, in assisting in the preparation of a circular letter issued by the State Department of Health which was intended as a guide to physicians in the performance of vaccination against smallpox, and in considering the question of sewage disposal into Lake Mohansic, and they have made recommendations for a state policy for dealing with mental defectives, and a number of suggestions designed to add to the efficiency of the health department of the city, such as recommending the establishment of two new milk stations, endorsing the department's request for several additional physicians and nurses in tuberculosis clinics, and the request of the department of charities for a larger nursing staff in the city hospitals

PENNSYLVANIA

Fountain Unveiled—The memorial fountain at the entrance of the Twelfth Street Playgrounds, Harrisburg, erected in honor of Dr William H Jones, an esteemed colored practitioner of Harrisburg, was dedicated with appropriate ceremonies, November 6

Medical Society Conducts Clinic—Physicians from the eight northwestern counties of Pennsylvania conducted a medical clinic held at St Vincent's and Homot hospitals, Erie, November 9 The clinic was held under the auspices of the Erie County Medical Society

Dispensary Opened—The Allentown Free Medical Dispensary of the Associated Charities was formally opened, November 4, and the third annual meeting of the Associated Charities Society was held at the recently acquired headquarters The dispensary will be under the direction of Dr William H Hartzell

Children's Ward Opened—The new children's ward of the York Hospital was opened October 27 The ward has accommodations for twenty-five patients and at the time of opening eight were under treatment The ward was donated to the hospital by Dr H David Smyser, York, and the equipment was supplied by the Ladies' Auxiliary Society

Jefferson Alumni Hold Meeting—At the annual meeting of the Jefferson Medical Alumni Association of northeastern Pennsylvania, held in Scranton, October 21, special medical and surgical clinics were given by members of the faculty of the college In the evening a banquet was held at which the following officers were elected President, Dr Frederick L. Van Sicle, Olyphant, vice-presidents Drs Edward F Hanlon, Hazleton, George R Andreas, Wilkes-Barre, and Lewis Edwards, Kingston, secretary, Dr John D Williams, Scranton, treasurer, Dr M J McGuire, Wilkes-Barre, auditor, Dr Merton E Marvin, Luzerne

Personal—Dr Joseph A. Stockler, Mont Alto, has been appointed laryngologist at the State Sanatorium, Hamburg ——Dr Howard L Hull, Chambersburg, has been appointed associate chief medical inspector of the Department of Health of Pennsylvania with headquarters at Harrisburg——Dr Fannie Davis, Pittsburgh, is reported to be critically ill in a hospital in Pittsburgh——Dr Frank I Walters, Pine Grove, who has been seriously ill, is reported to be improving ——Dr George W Mellon, Beaver, has returned from service with the American Red Cross at Belgrade——Dr John Spearman, Sharon, has returned after service of a year and one-half with the German army at Gleiwitz, Silesia

Philadelphia

Vital Statistician Resigns—Miss Eva Deerdorff who has been chief of the division of vital statistics of the department of health and charities since February, 1914, has resigned to assume the position of assistant director of the bureau of municipal research

University Approved Merger—On November 8 the trustees of the University of Pennsylvania empowered their finance committee to make arrangements with the committee representing the trustees of the Medico-Chirurgical College for the merging of the two institutions The Medico-Chirurgical board has given the same power to its committee The joint meeting was held November 15

Testimonial Banquet.—A testimonial banquet was given to Dr Daniel J McCarthy, November 4, to celebrate his return from service in the war zone——A dinner was given by the West Philadelphia Medical Society, October 26, in honor of Dr Charles E A Codman, president elect of the Medical Society of the State of Pennsylvania Dr John Welsh Choskey acted as toastmaster

Aid Association Election—At the thirty-seventh annual meeting of the Aid Association of the Philadelphia County Medical Society, November 8, a bequest of $5,000 by the will of Dr Eugene I Santee was announced This raises the total beneficient fund to $50,000 Dr Jacob R Shellenberg was elected president, Dr James T Wilson, vice-president, Dr Lewis H Adler, Jr, secretary, and Dr John B Turner, treasurer

Personal—Dr Richard H Harte, former director of health and charities, in this city, is one of the six surgeons appointed by President Wilson on the newly created board of first aid standardization The board will teach civilians first aid in time of peace, that the knowledge may be available for military requirements in the time of necessity——Dr Rufus S Reeves has been appointed surgeon to the University Settlement Dispensary at Twenty-Sixth and Lombard streets——Barton Cooke Hirst received the degree of LL.D from Pittsburgh University at the ceremonies incident to the dedication, on October 28, of the Elizabeth Steele Magee Hospital

Health Budget.—The council's committee on health and charities visited a number of public institutions on November 9, the annual visit incident to recommending appropriations for the coming year Dr S Lewis Ziegler, director of health and charities, accompanied the committee men He explained that the bureau of health asked for $754,340 for next year, as against $456,265 given this year, an increase of $298 075 In the bureau of charities $1 039 688 is asked for, or $179 336 less than was given this year This decrease is due largely to the fact that a number of sums are available this year for improvements including $100 000 for the erection of a power plant at the Home for the Indigent at Holmesburg $80 000 for a power plant at the Institution for Feeble Minded at Byberry $40 000 for steam and electric ducts and cables at the same place and also $30 000 for a sewage disposal plant, $38,160 for a heat light and power plant and $90 655 for the erection of buildings for the care of the feebleminded

SOUTH CAROLINA

Personal.—Dr Davis Furman has been reelected chairman of the Greenville board of health——Dr Luther A Riser, Columbia, is taking a special course in public health conservation at Tulane University New Orleans

Hospital News—Magdalene Hospital Chester has made an application to amend its charter that it may be known as Pryor's Hospital——Dr Frank H McLeod will entirely rebuild his hospital at Florence at a cost of about $30,000——St. Mary's Hospital, Anderson owned and operated by Dr C. Singleton Breedin, was opened to receive patients, October 26

Tuberculosis Items—The Greenville County Tuberculosis Camp was formally opened November 2 The camp has a modern building of sanitary construction and will accommodate from sixteen to twenty patients——An acre of land one mile beyond Ridgewood has been donated by Mr L T Wiles Eau Claire, as a site for a tuberculosis camp Plans have been prepared for four open air cottages, each to accommodate four patients There are at present eleven patients in the camp

TENNESSEE

Health Talks—As a part of the public health campaign which is being carried on actively in Nashville, almost every pulpit in the city was occupied October 17 by physicians

Tuberculosis Camp to Remain Open.—The tuberculosis camp at the Tri-State Fair grounds Memphis, will be kept open all winter under the direction of the Batchelor Baby Association During the summer 220 children were cared for and there are at present six in residence.

New Pellagra Hospital—A movement has been inaugurated by Hamilton County to take immediate steps in providing an isolation hospital for the treatment of persons suffering from pellagra——At the Orchard Knob Hospital there have been about fifty deaths from pellagra this year

Personal.—Dr Robert H Newman, Knoxville, who has been on duty with the American Red Cross in Germany for several months, has applied for further leave of absence and expects to go to Russia——Dr Philander D Sims, Chattanooga, celebrated his eighty-seventh birthday anniversary October 22

Hospital News—Large additions are to be made to the private hospital of Drs Robert P Oppenheimer and Henry T Kelso, Knoxville. Improvements will include a large and modernly equipped operating room——Baptists of Memphis plan to erect a new wing to the Baptist Memorial Hospital to cost $100,000

Contagious Disease Ward.—Contracts have been let for an isolation ward to be erected on the rear of the Erlanger Hospital lot, Chattanooga. The plans call for a one-story building with two wards each of four beds eight private rooms, a sterilizing room and quarters for the resident nurse The building is to cost $6 000

Sanatorium Trustees Appointed. — The governor has appointed the following trustees to establish the Tennessee State Sanatorium for Tuberculosis Drs Olin West Nashville, and Jere L. Crook, Jackson and Messrs W P Shipp Centerville George D Richardson Murfreesboro and George R. Burry, Rogersville The board has already looked over the Herbert domain, one of the sites proposed for the sanatorium

Diphtheria—The presence of diphtheria in Memphis caused the city board of education, through Superintendent A. A Kincannon to close all the white public grammar schools in the city, October 14, until further notice The Central High School and the Vocational School were not affected by the order There was no diphtheria among the negroes It is said that this order was not made on account of the fear on the part of the authorities that the disease would spread, but because the parents of schoolchildren were becoming panicky" and the attendance at many of the schools had fallen off remarkably The regular attendance at the Gordon school is 400, October 13, it had fallen to 100 The disease has not been severe and there were few fatalities Dr James L Andrews on behalf of the department of health, issued a statement explaining the situation to the citizens

TEXAS

State Surgeons Meet.—At the annual meeting of the Texas Surgical Society in San Antonio, October 19, the following officers were reelected president, Dr James E. Thompson, Galveston, vice presidents, Drs Joseph H Reuss, Cuero, and Frank Paschal San Antonio, secretary, Dr W Burton Thorning Houston, and treasurer, Dr John B Smoot, Dallas Dallas was selected as the next place of meeting

Higher Entrance Requirements—A report from the University of Texas Department of Medicine, says that beginning in 1917, in addition to a four-year high school education two years of college work, including courses in physics, chemistry, biology, English and either French or German, will be required for admission This makes fifty medical schools which have adopted for admission the requirement of two years of collegiate work.

Sanatorium Items.—Bids have been asked by the Texas Tuberculosis Sanatorium, Carlsbad, for the construction of two two-story and basement dormitories, a dining hall addition to the present subsistence building with basement, and remodeling of the old building and a sanitary dairy, all these structures to be of reenforced concrete and fire-proof construction——Contracts have been awarded for the erection of a solarium at the Tuberculosis Hospital connected with the Bexar County farm——The Floresville Sanitarium, which is under the management of Drs John F and Laura Beckmeyer, San Antonio, was formally dedicated October 28

WISCONSIN

County Sanatorium Opened—Muirdale, the new tuberculosis sanatorium for Milwaukee County, with accommodations for 275 patients, was formally dedicated November 14, and three days later was opened to receive patients

Sterilization Law—It is reported that ten male inmates of the State Home for the Feebleminded have been sterilized under the new state law Operations on the fourteen remaining male inmates of the home will be deferred until the results of the ten operations already performed have been observed.

Rabies—The head of a cow sent from Norrie, Marathon County when examined in the state hygienic laboratory, was found to be affected with rabies This is the first case of rabies found in the state for more than a year Stringent measures have been advised in the community to prevent the spread of the disease.

Tuberculosis Notes.—The seventh annual meeting of the Wisconsin Antituberculosis Society was held in Milwaukee, November 18 to 20 On the first day a sanatorium conference was held with Dr Thomas Willett West Allis, as chairman, on the second day the business meeting and annual dinner occurred, and on the third day there was a nurses' conference.

CANADA

Toronto Base Hospital in Greece—The University of Toronto Base Hospital which has been in Alexandria, Egypt, has gone to Saloniki.

Tuberculosis Sunday—November 14 was Tuberculosis Sunday throughout Ontario, and about 18 000 Ontario clergymen received instructions to preach on the subject.

Sanitary Institutions—Sanitation is to be an important matter in the various military camps throughout Ontario this winter Sanitary squads are being organized by the Ontario Board of Health under Dr John W S McCullough Toronto Each squad will consist of one commissioned officer, fourteen noncommissioned officers and forty privates

Personal.—Capt B S Hutcheson has arrived in Toronto to be medical officer for the American regiment being recruited in Toronto for overseas service All the members of this company are to be American residents in Toronto They take the oath of allegiance to the king, for a period of six months after the war——The Hon Dr Preston, a member of the Ontario government, is to represent that government at the funeral of Sir Charles Tupper in Halifax——Dr J R L Christison, Edmonton, Alta, is visiting in Toronto on his way to Europe to join the R A M C——Dr Thomas D Cumberland, assistant in the Hospital for the Insane, Toronto, is with the R A M C in Belgium

Hospital News—Word has been received by Canada's minister of militia, Sir Sam Hughes, that the new hospital for Canadian soldiers, financed by the Massey-Harris Company, Toronto, located in Chatham House Ramsgate, will be ready for use shortly——The Ontario Hospital staff for the new hospital being erected in Orpington, England, will be appointed by Canadian military authorities in England The appointments will be made from Canadian physicians already in England or on the continent Some will, however, be nominated by the Ontario government These appointments are causing some dissatisfaction both among the medical men in the Canadian militia, as well as among those in private life who have volunteered their services It is reported several of the latter have withdrawn their offer of services on account of the manner in which selections are to be made——There is said to be considerable of a tangle in connection with wounded soldiers returned to Canada unfit for further service Lieut-Col Marlow of the camp in Toronto with his medical board have been ordered to investigate the matter at Quebec The other members of the board are Major C J Currie and Capts F J Munn and F N Hughes

GENERAL

Child Welfare Exhibits—The Children's Bureau of the Federal Department of Labor announces that a bulletin has been prepared to serve as a reply to the many inquiries about child welfare exhibits, which may be had in single copies for the asking To those who are planning a baby show, a children's health conference, or to communities which expect to observe Baby Week next March, the bulletin offers the benefit of expert advice and practical experience It is full of suggestions for communities of all sizes, but advises that no community undertake a child welfare exhibit without the cooperation of all social agencies of the community Instances are given of the benefit to communities in the way of increased appropriations, permanent improvements and a combination of social welfare agencies to secure and carry out a program of legislation and welfare work following child welfare exhibits

New Officers for Southern Physicians—At the annual meeting of the Southern Medical Association held in Dallas, Tex, November 9 to 11, Atlanta, Ga, was selected as the next place of meeting Dr Robert Wilson, Jr, Charleston, S C, was elected president, and resolutions were adopted recommending that the proportion of medical officers in the regular military establishment of the United States should equal at least seventy-five one hundredths (75/100) of 1 per cent of the enlisted strength "or such number as the surgeon general deems necessary" The following section officers were elected medical section—Dr Khleaber H Beall, Fort Worth, Tex., chairman, Dr Frederick C Moor, Tallahassee, Fla, vice-chairman, and Dr Thompson Frazer, Asheville, N C, secretary, surgical section—Dr John H Blackburn, Bowling Green, Ky, chairman, Dr F Webb Griffith, Asheville, N C, vice-chairman, and Dr Lucian A Andree, New Orleans, secretary, eye, ear, nose and throat section—Dr J Williamson Jervey, Greenville, S C, chairman, Dr Thomas W Moore, Huntington, W Va, vice-chairman, and Dr William T Patton, New Orleans, secretary

Metal Mine Accidents in 1914—In Kansas, Minnesota, New Jersey, New Mexico, Oregon, South Dakota, Virginia and the Territory of Alaska, during 1914 there was a reduction of more than 20 per cent in the fatality rate in metal mines There was a slightly higher injury rate for most of the mining states for the same period, but, it is believed, as set forth in the report of Albert H Fay, mining engineer of the bureau of mines, that the enactment of workman's compensation laws and the educational campaign conducted by state inspectors, mine operators and the bureau of mines has resulted in the more accurate figures concerning mine accidents and therefore more nearly represents the real hazards of the industry than the reports of former years The number of fatalities during 1914 was 559 as compared with 683 in 1913 The number of men employed for 1914 was 158,115, while for 1913 it was 191,276 The fatality rate for 1914 was 3 54 per 1,000 employed, as against 3 57 in 1913 There were 5,073 serious injuries which resulted in the loss of time of twenty days or more, as compared with 5,890 for 1913 The serious injury rate for 1914 is 32 08 per 1,000 as compared with 30 79 for 1913 There were 25,143 slight injuries resulting in the loss of less than twenty days in each instance, as compared with 27 081 for 1913 or, 159 02 per 1,000, as compared with 141 58 for the preceding year

Infant Mortality Conference—Launching a concerted movement to "save the babies" of the whole United States, the American Association for Study and Prevention of Infant Mortality closed its sixth annual convention November 12 The delegates, who had been in session at the Bellevue-Stratford for three days, adopted a resolution calling on the association's members to cooperate with the Federal Children's Bureau at Washington, and the American Federation of Woman's Clubs in holding "Baby Saving Week" in every city in the country from March 4 to March 11, 1916 Uniform laws in all the states regarding the regulation of child labor and the enforcement of laws requiring all births to be reported within five days, under severe penalty for failure to do so, will be among the aims of the nation-wide campaign Congress will also be urged to defeat any bills which allow narcotic drugs to be used as constituents of "soothing syrups" and similar "remedies" for children's ailments The legislation passed in many states, purporting to regulate such "patent medicines," actually exempted from their provisions many deleterious preparations, it was said The next annual convention of the association will be held in Milwaukee in November, 1916 The following officers were elected president Dr Samuel McClintock Hamill, Philadelphia, vice presidents, Drs Joseph S Neff, Philadelphia, and Dr Thomas C McCleave Berkeley, Cal, secretary, Dr Philip Van Ingen, New York, treasurer, Austin McLanahan, Baltimore and executive secretary, Miss Gertrude B Knipp, Baltimore

FOREIGN

Annual Meeting of the Organized Profession in Ecuador—The first Congreso Medico-Ecuatoriano was held last month at Guayaquil with a large and representative assemblage Numerous communications were read and public health matters discussed, the time proving all too short for all the papers that had been presented and surgical demonstrations planned The closing banquet was a brilliant and cordial conclusion to the meeting

Monument to Carrion—August 27, the thirtieth anniversary of Daniel R Carrion's inoculation of himself with Peruvian verruga, a bronze memorial plate was unveiled to his memory The memorial is in the general hospital at Lima, Peru, and was erected by the medical staff of the hospital where Carrion, a medical student, made his experiment, the "Hospital Dos de Mayo" The *Cronica Medica* mentions that his aged mother was present The same issue gives a Spanish translation of the report on verruga and Oroya fever published by Strong, Tyzzer and Sellards in THE JOURNAL, March 6, 1915 Young Carrion's experiment resulted fatally and the scientific results were not conclusive

Deaths in the Profession Abroad—E Jeger, known for his experimental work on surgery of the vessels and for the surgical articles he despatched by aviator post during the siege of Prszemysl, was taken prisoner by the Russians and died recently in captivity——F M Oberländer, one of the leading urologists of Germany, aged 67 He was one of the founders and editors of the *Klinisches Handbuch der Harn- und Sexualorgane*, and of the *Centralblatt* for the same specialty, and the *Monatsschrift fur Urologie*——E Ludwig, professor emeritus of applied medical chemistry at the University of Vienna, aged 73, author of several textbooks on medical and pharmaceutical chemistry His contributions to chemistry were numerous, principally in the line of analysis He served as president of the national public health service and was a member of the upper house

WAR NOTES

Exportation of Medical Publications Forbidden—The *Allg med Central-Zeitung* relates that the publishers of medical works and periodicals in the Marken states of Germany have been notified that the military authorities cannot consent further to medical works being sent to the enemies' countries if the works contain anything that might help the enemy in conducting the war The publishers are asked to confer with the medical branch of the war department in case of doubt Brandenburg including Berlin is one of the marches

Alternating Service of the Medical Force with the French Army—A Paris exchange states that the government has made arrangements by which physicians wearied by fifteen months' service with the active army can yield their places to others now in the home zone. Among the 8 000 with the army, 1,500 have expressed a desire to be relieved of this service, but there are only 600 available among those who have not already gone to the front The exchanges are made very gradually so as not to interfere with the workings of the service.

Visit of Inspection to Camps of Prisoners in Austria—The officers of the international committee of the Red Cross, which has its headquarters at Geneva recently visited Vienna to inspect the camps of prisoners of war and of interned civilians The party included the president Ador, Dr Ferriere and Dr Schulthess-Rechberg They visited the camps at Ralzenau Lengbach Wieselburg and Mauthausen, and the Vienna information bureau for prisoners of war, and also the various activities of the Austrian Red Cross, which facilitated their mission in every way

Bathing Facilities for the Soldiers on the Firing Line—The bath trains and similar arrangements for bathing require a track or good roads and hence cannot be utilized by the soldiers at the farthest front To remedy this the Austrian Red Cross has provided a bathing outfit which is contained in two wooden boxes that can be carried in any vehicle Three hundred such outfits have been despatched to the extreme front and are proving very satisfactory The outfit was devised by Dr J V Winter, and is adapted for field hospitals and for disinfection purposes

The Medical Profession of France and the War—A complete list of all French physicians and surgeons who have been killed, wounded or taken prisoner in the war to date has been issued at Paris bv the Societe d' anatomie comparee It is called the "Livre d' or de la grande famille médicale." and contains also the names of all who have been honored in any way for conspicuous gallantry with the details, both for army and navy medical officers and civilian physicians and surgeons veterinarians and pharmacists The price of the work is 2 francs It is published by Maloine 25 rue de l'Ecole de Medecine Paris the proceeds, we understand to go to the relief fund for members of the profession during the war

PARIS LETTER

PARIS, Oct 21, 1915

The War

ROTATION IN SERVICE AT THE FRONT

Many physicians who have been at the front since the outbreak of the war have complained of the injustice in the fact that many other physicians have continued to be stationed at a distance from the front In a previous letter (THE JOURNAL, Sept 4, 1915, p 891) I mentioned an article by M André Maginot which voiced some of these complaints The undersecretary for the military medical service has therefore given instructions that, in each regional division, a system of rotation in service shall be established and each physician shall declare, within the forty-eight hours following the receipt of the order for his departure, if he is unfit for active service in the field There are, however, regimental physicians who are entirely willing to remain at the front if necessary They ask why such relief should apply solely to physicians and not to officers as well

THE MEDICOSURGICAL STATISTICS OF THE WAR

I mentioned in a previous letter (THE JOURNAL, May 15, 1915 p 1671) the character of the medicosurgical statistics of the war that had been decided on by the minister of war Certain journals have been ridiculing the idea of such statistics, and Dr Jacques Bertillon formerly head of the bureau of municipal statistics of the city of Paris, has come to its defense He mentions that the military surgeon Chenu compiled medicosurgical statistics on the Crimean and Italian wars which marked an epoch in the history of the science. In particular, conservative surgery, today triumphant, drew from Chenu s statistics the first arguments for its defense, these proved that at this time useless or even harmful amputations were too often made, and that depriving the patient of a limb too often endangers instead of saving his life How many times has there not been occasion to regret that no such researches were made in 1870 71!

PROHIBITION OF DELIVERY OF ROENTGENOGRAMS TO THE WOUNDED

The attention of the minister of war has been called to the serious disadvantages resulting from the delivery of tracings or roentgenograms to soldiers who have sustained wounds of war These pictures, which are scrupulously preserved by the wounded, often give rise to functional incapacities suggested to the patients by the presence of a foreign body The minister has therefore given instructions that roentgenograms etc as well as the case records, shall never be turned over to the patients on their successive discharges from the various hospitals but shall be transmitted under seal from one hospital to the other, being preserved in the last hospital where the patients have been treated, or finally transmitted to the administrative office of the regional medical service, where they may be consulted whenever it is desirable

The minister moreover, reminds the roentgenographers that they are not to perform roentgenoscopy on the men who have been sent back to their military duties after cure, such examinations being reserved for patients under treatment

EXAMINATION OF THE URINE OF SOLDIERS PRESENTING PICRIC ACID JAUNDICE

At the Reunion medico-chirurgicale de la X-e armee Dr Launoy speaking on the same subject, recommended that the test be performed not on the urine itself but on a concentrated and carefully purified urinary extract The reaction of the strip of wool (THE JOURNAL, Sept. 25, 1915, p 1124) ought to be considered positive only when the coloration obtained resists the decolorizing action of a 1 9 solution of liquor potassae chlorinatae. When possible, the reactions of the urine should be controlled by the character and reactions of the blood serum

SERUMS FOR THE USE OF CIVILIAN PHYSICIANS

The attention of the minister of the interior was called to the serious inconvenience which the civilian population suffers through the fact that civilian physicians cannot procure serums which are indispensable for the practice of their profession He replied that civilian physicians may procure antidiphtheric, antitetanic, antimeningococcus and antidysenteric serums directly from the Pasteur institute The only reservation is, in the case of the last three, that the needs of the army must first be supplied The supplies of the same serums, moreover, are as much as possible put at the disposal of the prefects for use in charity work In urgent cases, serum may be supplied to physicians who need it immediately for their private practice

GENERAL INSPECTION OF THE HYGIENE OF THE ARMY

A general inspection of the hygienic condition of the troops stationed in the interior has just been ordered for the duration of the war Dr Vaillard medical inspector general of the military medical service, is to have charge of this inspection, and is to be responsible directly to the minister of war His jurisdiction is defined by the assistant secretary for the military medical service as covering the study and examination on the spot of matters relating to the hygiene and material conditions of the life of the troops, their sanitary condition and the measures necessary to prevent or check the development of epidemics either among the soldiers or among the civil population

THE DIFFICULTY OF OBTAINING ALCOHOL FOR PHARMACEUTICAL USE

Alcohol has been requisitioned for the manufacture of powder To obtain the alcohol necessary for their work, therefore, pharmacists each month have to address a request to the Office des produits chimiques et pharmaceutiques (THE JOURNAL Nov 14 1914, p 1775) This alcohol is exclusively for use in filling prescriptions and preparing medicines, and is not to be sold as such Pharmacists are to ask for no more than the carefully calculated monthly needs of their laboratories The Office des produits chimiques et pharmaceutiques issues vouchers by means of which pharmacists may procure alcohol either directly or through their regular dealer from the distillery indicated on the voucher The alcohol is furnished by the distillery at the price of requisition, which is now about 100 francs (about $20) per hectoliter (about 26 gallons) at the producers The Office des produits chimiques et pharmaceutiques accedes to demands of pharmacists and manufacturers of pharmaceutical products employing not more than 3 hectoliters a month, it cannot comply with demands for larger quantities

BERLIN LETTER

Berlin, Oct 20, 1915

Personal

Prof Ferdinand Gotz, sanitary expert and director of the German system of physical exercise, died in Leipzig, October 13 at the age of 88 years Early in his career he became interested in gymnastics and shortly after arriving in Leipzig in 1855, he was instrumental in organizing several turner or gymnastic societies He also assumed the editorship of a number of journals devoted to gymnastics He was the author of several books on gymnastics and for many years was chairman of the Association of German Turner Societies His eighty-fifth birthday was celebrated by all the German turner societies, and an honorary Ph D was conferred on him by the university of Kiel

Professor Sklarek, for many years publisher of the *Naturwissenschaftliche Rundschau,* died in Berlin, October 10, at the age of 80 He has been given the credit of having brought the progress made in the natural sciences and medicine before the public in a popular manner by means of lectures delivered before the Berlin Workers Society and by editorials in the daily press as well as in the journals he edited In 1868 he published a work on the care of the health He was also one of the founders of the Berlin Meteorological and Physiological Society

Professor Boveri, ordinary professor of zoology and comparative anatomy, died in Würzburg October 16 at the age of 53 years He became lecturer at the university of Munich in 1888 In 1893 he was appointed ordinary professor of zoology and comparative anatomy, succeeding Professor Semper, and director of the zoologic institute in Würzburg He remained loyal to this institution, refusing the call to Freiburg in 1912 as successor to August Weismann, and also refusing to accept the directorship of the new Kaiser Wilhelm Institute for Biology in Berlin His work in histology, embryology and comparative anatomy was epoch making He revolutionized the conception of the tissue cells by discovering the chromosomes (simultaneously with v Benecken) in the cell nucleus and establishing the important function played by them in cell division His studies made in connection with these investigations on cells of various forms of animal life were contained in three volumes entitled "Cell Studies" (Jena 1887-1890) His continued research on fertilization and nutrition of the cell placed the study of embryology on an entirely new basis Much of his work was done on the amphioxus, coral zoophytes and similar animals In 1909 he published his researches on the determination of sex in the "Physikalischmedizinische Gesellschaft" at Würzburg One of his most important publications was that setting forth the results of his study of the pathologic anatomy of tumors In 1914 he published his theory of the development of malignant tumors deduced from his extensive research mainly on the egg of the sea urchin The basis on which he places the etiology of these malignant growths is a developmental defect of the cell nucleus His theory did not meet with the approval of well-known pathologists

Family Life and the Nation

The activities before the beginning of the war directed toward stopping the diminution in the birth rate of Germany have received a tremendous stimulus by the enormous loss of life caused by the war Shortly after the Franco-Prussian war, the birth rate increased rapidly, reaching the highest point in 1876, namely, 42 6 per thousand This rate gradually diminished, and in 1913 had fallen to 28 3 per thousand. In Prussia the birth rate in 1899 was 37 5 and in 1913 was 29 per thousand With regard to the excess of births over deaths, this, too, is changing In 1895, in Prussia, it was 14 per thousand, in 1913, it was only 13.2 In order to meet the exigencies of the occasion, the newly founded German Society for Bevölkerungspolitik, organized for scientific study of the subject, met recently in Berlin and discussed the question very fully The presiding officer, Dr Julius Wolf, in his address directed attention to the Russian statistics showing an increase in population of 3,000,000 to 4,000,000 per year as against 800,000 in Germany The population of Russia is 180,000,000 as against 68,000,000 in Germany The difference between the French and German increase is not so great Previous experience tends to show that there will not be a continuous increase in births after the war In fact, a large number of cripples and partial invalids and the labor which necessarily must be performed by women will tend to lower the birth rate and do it rapidly, much more so than would otherwise be the case Dr Wolf directed attention to every condition bearing on this point, and finally suggested three aims to work for as helps toward the solution of the problem (1) To exert influence to increase the number of marriages and families with a larger number of children In Prussia the average age of men when they marry is twenty-nine years, which means that for at least ten years they have been exposed to venereal infection with the resulting possibility of sterility To combat this, he urged a reform in the present methods of training men for trades, so that they might begin to earn more money earlier Next to be considered, he said, were the questions of furnishing living places, motherhood premiums and here the experiences made in Australia would be of great value The money, he thought, could be provided by taxation, the single man carrying the load, the man of family contributing but little, instead of the present per capita system The workman can hardly be expected to have a large family unless he is assisted financially, the community would have to assume the burden The third child is liable to upset the family budget, the fourth child brings the wolf to the door The community must share this burden of care

(2) Success in the campaign against venereal diseases would increase the number of births by 100,000 and more. Infant mortality must also be lowered The infant mortality of Germany is now 15 to 100 born living, in Norway, it is 7 and in Australia only 5 per cent Infant mortality is highest in Bavaria Augsburg shows 21 deaths among infants as against 15 in Berlin and 11 in the Hanse towns "And certainly," Wolf exclaimed, "the constitution of the Berlin and Hamburg child is no better than that of the Bavarian child" "Pediatrists to the front!"

(3) Emigration to new territory offers another solution which should be considered as a means of furnishing facilities for better means of living and increased incomes

LONDON LETTER

London, Oct 29, 1915

The War

THE TOTAL BRITISH CASUALTIES NOW HALF A MILLION

The total British casualties up to October 9 have just been published In the western area, that is, France and Belgium, 4,401 officers and 60,059 men have been killed, and 9,169 officers and 225,716 men have been wounded, 1,567 officers and 61 134 men are missing, the greater number of the latter are probably killed This makes the total casualties 362 046 in the western area In all fields of operation, 6 660 officers and 94,992 men have been killed 12 633 officers and 304 832 men have been wounded, and 2,000 officers and 72,177 men are missing The total British casualties, therefore, were 493,294 At the time of writing, they must have reached half a million

CHILD LIFE AND THE NATION

The great loss of life in the war has stimulated the recent movement to promote the welfare of motherhood and infancy A meeting organized by the "Central Economic Guild" of the "Central Committee for the National Patriotic Organization" has been held to inaugurate a campaign with the object of coordinating all the efforts in this direction on national lines Representatives of the government and prominent philanthropists and physicians were present Mr Herbert Samuel, the postmaster general, said that the nations of Europe were engaged in the destruction of life on the most colossal scale known to history Ready to our hands and obvious was the remedy, so far as this country was concerned, to make good the loss Much of the mortality among infants was not inevitable, and in addition they must consider antenatal mortality The saving of these lives was one of the few questions in which the government and the legislature were ahead of the nation The majority of local authorities showed little activity Public opinion should be made more vocal Pressure should be brought to bear on lethargic local authorities, and a greater number of men and women who have the time should throw themselves wholeheartedly into the work of the health associations and other organizations engaged in this movement.

Sir James Crichton-Browne said that up to the present we had irreparably lost at least 150,000 of the flower of our man-hood, and this waste of human treasure imposed on us the obligation to practice the strictest economy in human life It was disconcerting to find that the supply of infants was falling off Having regard to the vital importance to the economic future of the country of copious reinforcement of infant life attention should be given to the neomalthusian propaganda which was largely cutting off these reinforcements Referring to the effect of the industrial occupation of women on prenatal mortality and on the health of the infant Sir James said that now that we had a larger number of women than ever before engaged in industrial pursuits we must give them the benefit of the best antenatal hygiene We wanted not puny atrophied debilitated brats but promising little pink buds of humanity That much of the mortality among infants could be prevented was beyond question Doctors' babies died at the rate of only 40 per thousand in the first year because doctors knew how to look after them, whereas those of miners who did not know how to look after them died at the rate of 160 In conclusion Sir James suggested that further investigation into antenatal pathology should be made and that for this purpose stillbirths should be registered and centers of scientific research established

An American Nostrum in Australia

William W Dobson the agent in Western Australia for Radam's Microbe Killer, has been charged at Fremantle with having published a statement in connection with this nostrum which was false He admitted the offense and pleaded for a light penalty on the ground that he was merely a subagent, and was not responsible for the wording of the pamphlet The prosecution was based on the fact that Radam's Microbe Killer was vaunted as a cure-all, the venders claimed that it was perfectly safe and contained no acids The health department has purchased four bottles at the cost of $5 and it was found that it contained 0 5 per cent. of sulphurous or sulphuric acid and 99 5 per cent of water It was therefore stated that Radam's Microbe Killer was a fraud It appears that this fluid was manufactured in America and had proved a failure. Later it reappeared under another name until its importation was prohibited by the commonwealth authority The proprietor next attempted to import the "Microbe Killer" into the commonwealth but the federal authority prohibited it as well The firm thereupon started concocting the Microbe Killer" in the eastern states In order to show how serious the result of the false statement in the pamphlet might be the prosecution announced its intention of calling expert medical evidence The defendant objected to this on the ground that he had pleaded guilty The objection was upheld and the prosecution was therefore prevented from bringing corroboration of the statement that the claims of the venders were untenable. In the end Dobson was fined $25 with $28 costs

Marriages

Walter Charles August Steffens M D College Point N Y to Miss Catherine MacDougal of Burlington Vt, in New York City, October 30

Lieut Henry L. David M R C. U S Army Fort Terry N Y to Miss Mary A. Story of Canaan N H, at New London Conn, October 14

James A. Ramsey M D Arlington Texas to Mrs Fletcher J Lively of Prineville Ore. at Fort Worth, Texas, recently

Harry Aloysius Bishop M D Washington D C, to Miss Roberta Morgan at Fort H G Wright N Y, October 6

Raymond Canfield Dodd, M D Glen Ridge N J to Miss Edna Houston Jones of Bloomfield, N J, October 12

Lowell Mason Campbell M D Minneapolis, Minn, to Miss Elda Bishop of Dodgeville, Wis, November 3

William Sweeny Stucky, M D to Miss Anne Clay McDowell both of Lexington Ky, November 15

John Ira Spooner M D to Miss Annette Beneta Folmar, both of Donalsonville Ga November 2

George Carroll Smith, M D St. Louis, to Miss Margaret Clare Shirley of Chicago, November 6

Constantine Theodore, M.D, to Miss Marion Cronin, both of Chicago November 6

John George Williams, M D to Miss Angela Sause, both of Brooklyn November 3

Deaths

Edward Livingston Trudeau, M D College of Physicians and Surgeons in the City of New York, 1871, a pioneer in the fresh air treatment of tuberculosis, died at his home in Saranac Lake, N Y, November 15, aged 67

Dr Trudeau was born in New York, Oct 5, 1848 the son of Dr James and Cephise (Berger) Trudeau A year after his graduation in medicine he began practice in New York City but on account of tuberculosis of the lungs was forced to leave his work He decided to go to the Adirondacks and established a home at Saranac Lake. His belief in the efficacy of fresh air in the treatment of incipient tuberculosis worked so well in his own case, that in 1884 he founded the Adirondack Cottage Sanatorium for the Treatment of Incipient Tuberculosis in Working Men and Women the first institution of its kind to be established in the United States

The theories of Dr Trudeau there first put in practice are now acknowledged the world over, and the best testimonial to the worth of the treatment is the immense number of those who have graduated cured from the institution Ten years after he founded the Adirondack Cottage Sanatorium Dr Trudeau established the Saranac Laboratory for the Study of Tuberculosis the first research laboratory on this subject to be established in the United States He continued in charge of both of these institutions until his death

Dr Trudeau was given the honorary degree of M Sc by Columbia University in 1899, and the degree of LL.D by McGill University Montreal, in 1904, and nine years later by the University of Pennsylvania In addition to his fellowship in the American Medical Association and New York Academy of Medicine, Dr Trudeau was a member of the Association of Pathologists and Bacteriologists, the Association of American Physicians and the American Climatological Association He was the first president of the National Association for the Study and Prevention of Tuberculosis In 1908 a "Festschrift' containing contributions on tuberculosis by his co-workers in the Saranac Laboratory was dedicated to him in honor of his sixtieth birthday

He was widely known throughout the country, not only on account of the plucky fight which he made for more than forty years against tuberculosis, but because of his prolific contributions to the literature of the subject His last illness began with an attack of pneumonia at Paul Smith's in the Adirondacks about two months ago

Christian Berry Stemen, M D Medical College of Ohio Cincinnati 1875, aged 75, a Fellow of the American Medical Association, for a quarter of a century chief surgeon of the Pennsylvania System at Fort Wayne, dean of the Fort Wayne College of Medicine and for many terms a member of the board of regents of the University of Indiana, once president of Taylor University and for two years professor of surgery in the University of Kansas, one of the most prominent and esteemed surgeons of the Middle West, died at his home in Fort Wayne, Ind, November 13

George F Chittenden, M D University of Louisville, Ky, 1855, aged 84, assistant surgeon of the Sixteenth Indiana Volunteer Infantry and later medical director of General A J Smith's Division of the Thirteenth Army Corps, and medical director of Camp Morton Indianapolis, after his resignation from the service, representative from Madison and Henry counties in 1868 and a commissioner of the State Hospital for the Insane five years later, died at the home of his daughter in Anderson Ind, October 31

Perry Jaffa, M D Gross Medical College Denver, 1900, aged 45 a Fellow of the American Medical Association and formerly vice president of the Colorado State Medical Society and secretary of the Las Animas County Medical Society, city physician health officer and secretary of the Board of Health of Trinidad Colo local surgeon of the Colorado and Wyoming Railroad and Colorado Fuel and Iron Company, died at the home of his brother in Denver, November 2 from heart disease.

Hermann E Hasse, M D University of Würzburg Germany 1861, aged 79 major and surgeon of the Twenty-Fourth Wisconsin Volunteer Infantry during the Civil War, an authority on botanical subjects and especially lichens, the author of a monograph on the Lichens of Southern California, published by the Smithsonian Institute for seventeen years chief surgeon of the Soldiers' Home, Santa Monica Calif, died at his home in that city October 30 des produits chimiques et pharmaceutiques accedes to demands of pharmacists and manufacturers of pharmaceutical products employing not more than 3 hectoliters a month, it cannot comply with demands for larger quantities

BERLIN LETTER

Berlin, Oct 20, 1915

Personal

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The great loss of life in the war has stimulated the recent movement to promote the welfare of motherhood and infancy A meeting organized by the "Central Economic Guild" of the "Central Committee for the National Patriotic Organization" has been held to inaugurate a campaign with the object of coordinating all the efforts in this direction on national lines Representatives of the government and prominent philanthropists and physicians were present Mr Herbert Samuel, the postmaster general, said that the nations of Europe were engaged in the destruction of life on the most colossal scale known to history Ready to our hands and obvious was the remedy, so far as this country was concerned, to make good the loss Much of the mortality among infants was not inevitable, and in addition they must consider antenatal mortality The saving of these lives was one of the few questions in which the government and the legislature were ahead of the nation The majority of local authorities showed little activity Public opinion should be made more vocal Pressure should be brought to bear on lethargic local authorities, and a greater number of men and women who have the time should throw themselves wholeheartedly into the work of the health associations and other organizations engaged in this movement.

Sir James Crichton-Browne said that up to the present we had irreparably lost at least 150,000 of the flower of our man-

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

FRAUDULENT MEDICAL INSTITUTES IN NEW YORK

The State Department of Labor of New York in connection with the Bureau of Industries and Immigration, has been making an investigation of some of the fraudulent 'medical institutes' in New York City A report issued by the department contains a brief account of what has been accomplished in the protection of immigrants and aliens who have been made the especial prey of these frauds A description is given of the methods of these medical fakers They open sumptuous offices under high-sounding names and place advertisements in the foreign-language press They also distribute circulars in all languages, throughout the immigrant section of the city of New York calling attention to the wonders of the "institute" These circulars and advertisements are so worded as to give the impression that the institute is a charitable organization with advice and consultation "absolutely free"—a charge being made for medicine only What happens to a person who consults the swindlers who run these institutes is thus described in the report

> The applicant is ushered into a private office. To comply with the law a registered physician under whose name the institute' operates and who is very often only an instrument in the employ of an unregistered financial backer, in addition to two or three interpreters all representing themselves as physicians take the patient in hand He is placed before a large machine of complex appearance that conveys the impression to the ignorant immigrant of being costly and almost miraculous and is examined by the two or more interpreters, who dramatically and with apparent emotion inform the patient that he is suffering from some dreadful disease, which if longer neglected will result in death The patient becomes alarmed and agrees to pay any price for a cure which is guaranteed A large sum is at first requested as part payment but any amount that the patient has or can obtain is accepted It is unnecessary to state that the so-called examination and later treatment' are absolutely without merit, and that unregistered assistants are acting as physicians and treating the patient No prescriptions are given as the so-called institute' provides all medicines and medicinal appliances"

The report also describes the "wax museum" method of roping in the unsuspecting immigrant It is said, also, that some of these "institutes and museums" publish newspapers and books that are extensively distributed, describing the marvelous cures accomplished

> 'It is not uncommon for these physicians' to resort to forgery trickery or any other device in order to obtain the savings of their unfortunate victims They have been known to take bank books and withdraw entire deposits on such orders Persons convicted in various states for similar practices are now operating in New York City"

One of the so-called 'professors," in one of these institutes, who was not a registered physician confessed to a representative of the bureau that before examination patients are asked to undress in an anteroom where their clothes are searched for bank books money, etc., to enable the fakers to estimate the size of the fee they shall demand. The victims are invariably told that they are suffering from some dangerous ailment and the report cites instances in which the victims who had been robbed of all their money were found by reputable physicians to be suffering from no disease at all Details of a number of such instances are given in which the representatives of the bureau were enabled to recover large sums of money from these fakers Although it is expensive and troublesome, the bureau has been able to secure evidence in many instances against these fraudulent institutes It is estimated that thousands of people, especially immigrants, are daily victims of these leeches One "institute," which was compelled to disband through the efforts of the bureau, had an enrolment of about 14,000 patients

SOME MISCELLANEOUS NOSTRUMS FOR EXTERNAL APPLICATION

HILL'S FRECKLE LOTION

"Hill's Freckle Lotion" is said to be put on the market by J V Hill, Providence, R I The state chemists in the Report of the Connecticut Agricultural Station state that analysis showed the preparation to be a solution of corrosive sublimate and water in the strength of 1 84 per cent bichlorid of mercury According to the same report, the following claims were made for this product

> is absolutely harmless when used externally according to directions
>
> Removes moth, tan freckles, pimples, ringworms and all eruptions of the skin

As the Connecticut chemists say, Hill's Freckle Lotion "is an extremely dangerous preparation"

KINGSBERY S FRECKLE LOTION

"Kingsbery s Freckle Lotion (1st strength)" is said to be put on the market by E W Kingsbery, Randolph, Mass According to the Report of the Connecticut Agricultural Experiment Station 1914, the following claims have been made for this product

> 'Will positively remove freckles tan, moth patches etc., from the face hands and arms without the slightest injury to the most sensitive skin
>
> Unequalled for use in ivy and dogwood poison insect bites and stings salt rheum eczema and all skin irritations stopping the itching immediately and counteracting the poison

Kingsbery's Freckle Lotion was analyzed by the state chemists of Connecticut who reported that it, like "Hill's Freckle Lotion" is a solution of bichlorid of mercury in water, containing 5.3 parts of the corrosivè sublimate to 1,000 parts of water As the Connecticut officials state this "is an exceedingly dangerous remedy to use" The use of the poisonous salts of mercury, even externally, is fraught with danger There are numerous cases on record of poisoning from the external application of mercurial compounds Taylor quotes a case of two brothers who died from the effects of absorbing corrosive sublimate through the unbroken skin Death has followed the absorption of corrosive sublimate in dilutions of 1 to 1,000 and 1 to 2,000

KULUX COMPOUND

Kulux Compound is sold by the Kulux Manufacturing Company, Rochester N Y a concern that is apparently another of the numerous schemes emanating from the fertile brains that have conceived and executed many mail-order frauds Our readers will call to mind such companies as the fraudulent 'New York Institute of Science,' the equally fraudulent 'Cartilage Company," to say nothing of the Okola Laboratory" swindle, the "Dr Turner Obesity Cure" and a number of other concerns of similar type. Kulux Compound has been advertised on the "prescription fake" method under such claims as the following

> 'Makes the skin transparent and removes all defects such as freckles tan sun spots roughness and ruddiness
>
> Blemishes of every kind disappear as if by magic.
>
> This is the private prescription of a famous Parisian beauty'

The alleged "prescription" calls for a "1 ounce bottle of Kulux Compound which is to be added to a mixture of water and witch hazel Kulux Compound has been reported on by several state chemists The following, taken from the Medical Frauds" bulletin issued by the Indiana State Board of Health may be taken as typical

Zinc oxid	7 per cent.
Bismuth subcarbonate	5 per cent.
Glycerin	10 per cent.
Water	78 per cent.

The Indiana chemists state further that although the retail price of Kulux Compound is 50 cents, the value of the ingredients is 4 cents

MRS MCCORRISON'S FAMOUS DIAMOND LOTION NO 1

According to the report of the Connecticut Agricultural Experiment Station for 1914, Mrs McCorrison's Famous Diamond Lotion No 1 is put on the market by E K Guenther of Waldoboro, Maine, under the following claims

> "Will remove Moth, Tan, Freckles, Pimples, Blackheads, Salt Rheum, Eczema and all the various affections of like character"
> "It is unlike any other preparation for the skin and complexion"

The Connecticut chemists reported that it was essentially solution of bichlorid of mercury in the strength of 28.2 parts of the corrosive sublimate to 1,000 of water The stuff is a dangerous poison

NEROXIN

Neroxin is another one of the numerous "prescription fake" nostrums put out by the Cooper Pharmacal Company of Chicago As has been mentioned before, the Cooper concern exploits its frauds in fake "Beauty Departments" under the name "Valeska Suratt" Here, for instance, is a paragraph from an advertisement put in the form of reading matter and supposed to be devoted to "Secrets of Remarkable Formulas Revealed by Valeska Suratt"

> "Blackheads will be removed in a few minutes by first washing the face, then sprinkling some neroxin on the sponge, wet with hot water, and rubbing over the blackheads for a few minutes Then wash the face again. The neroxin can be procured for fifty cents at any drug store"

According to the bulletin on "Medical Frauds" issued by the Indiana State Board of Health, Neroxin contains

Borax	55 per cent.
Soda	25 per cent.

According to the same authority, Neroxin retails for 50 cents, the value of the ingredients is 3 cents

OTHINE

Othine is put on the market by a concern calling itself the "Othine Laboratories, Buffalo," which claim to be the "proprietors of Mrs E C White's Famous Prescription, Othine-Double Strength" Othine is sold as a "remover of freckles" and such claims as the following are to be found among the advertising

> "Othine is altogether unlike the old fashioned skin remedies, complexion bleaches, lotions, etc, which irritate the skin beyond endurance."
> "It is absolutely harmless to the most delicate complexion. "
> "If it contained a single injurious ingredient I certainly would not put it on my face."

Othine can be purchased at the drug stores—$2 for a 2½-ounce jar Those who have written to the "Othine Laboratories" for information, have received a series of circular letters signed "Mrs E C White" In the first letter the correspondent was told

> "It requires at least a box of Othine to remove freckles Samples would be too small to accomplish anything, therefore, I do not send them, so please do not write me for samples. The full treatment of Othine will be sent you in a plain wrapper, charges prepaid on receipt of $2 00"

Some time later—the $2 not having been sent—another letter came from the "Othine Laboratories" offering the 2½-ounce jar of Othine for $1 This offer also was ignored and in due time a third letter came in which the offer was made that a 1-ounce package of Othine would be sent for 50 cents!

Othine has been reported on by the state chemists of Connecticut, Indiana and Kansas The reports all agree in essentials According to the Connecticut chemists, Othine contains 7 7 per cent bismuth subnitrate and 11 5 per cent ammoniated mercury with a fatty base Ammoniated mercury is a powerful caustic poison and it is little less than criminal that a product containing it should be sold under the claim that it is "absolutely harmless to the most delicate complexion"

Correspondence

An Important Rule for the Operating Room

To the Editor —Never allow any relatives or friends of the patient to be present at a painful operation, nor at one requiring a general anesthetic I adopted this rule twenty-five years ago, and its advantages have been so manifest that I cannot understand why it is not universally followed So far as I know, it has cost me only one patient directly One mother would not permit an operation on her child unless she could be present, but she was the only one of the sort. Indirectly it has probably cost me a few more I have heard that some people think it very queer that "Dr Gifford will not allow any relatives to be there", but the statistics of my clinic do not indicate that any large number have stayed away on that account. When they object, I explain to them as kindly as possible that some people cannot control themselves at an operation, and that while I feel quite certain that they, in particular, would not be troublesome, still, a rule is a rule and must be enforced to avoid the appearance of partiality Since I have learned to modulate my voice this has always worked

I consider this rule an important one because it is best for the relatives, for the surgeon and for the patient It is best for the relatives because it saves them the shock of witnessing the struggles and groans of the semiconscious patient It is best for the doctor because it relieves him of the influence which the presence of anxious relatives always exerts Generally this influence is merely depressing, but sometimes it is positively disturbing, as in one of the cases of my early practice, when a stalwart father stood by and encouraged me saying, "By Heaven, Doc, if you hurt my boy's eyes I'll kill you!" I think it was this case that made me adopt the rule Moreover, if anything goes wrong with the anesthetic or the operation and you think the patient may be going to die, you all know how pleasant it is to have one or more relatives right at hand Finally, and most important of all, the rule works in the best interests of the patient by leaving the mind of the surgeon free to follow the dictates of his reason and his conscience, regardless of appearances There doubtless are surgeons of strong enough fiber to be above such influences, but I can easily conceive a situation in which the operator might swerve a little from the proper procedure because, to a relative, it would seem brutal or reckless, and in case of a bad result, he would be blamed Even aside from such ticklish situations, I think it will be readily admitted that in all serious operations the surgeon will, in the long run, be better able to give the case the proper consideration if he is free from the bother which the presence of relatives produces I am quite sure that many others follow this rule, but it is by no means as generally adopted as it should be. It ought to be practically universal so that the public may be educated on the point and the young surgeon will not be afraid to enforce it

Harold Gifford, M D, Omaha

Does the Cornea Aid in Accommodation?

To the Editor —I have searched repeatedly for a statement that the cornea was concerned with the accommodation of the eye in vision, but so far in vain When using the ophthalmometer in looking for astigmatism in children, I frequently see the cornea become more or less convex, in response to accommodation, sometimes as much as from 1 to 4 diopters The ciliary muscle is circular—a sphincter muscle, so to speak It acts at the edge of the cornea and the eyeball is more or less elastic When the ciliary muscle contracts to take the tension off the lens, it makes the cornea bulge or become more convex, thus aiding in the act of accommodation Stress has been laid on the idea that the lens is the great factor in bringing the rays of light to a point on the retina, when the truth is that it does only four fifteenths of the work, the remaining eleven fifteenths being done by the cornea and aqueous It may be asked why the young patient having cataract operation has lost all his power of accommodation In reply I would ask why the person receiving a blow on the eye sometimes loses all his power of accommodation at once, and the eye becomes myopic and the pupil dilated with all the eye structures apparently physically intact

C S Minnich, M D, Palmer, Neb

[Comment—The foregoing theory of accommodation would be decidedly interesting and of undoubted value if the observations could be backed up by facts This does not seem to be the case so far as these observations have a bearing on the actual mechanism of accommodation The annular portion of the ciliary muscle, which has most to do with the relaxation of the suspensory ligament of the lens, is separated from the sclerocornea by the radiating fibers of that muscle, and it is difficult to see how the annular portion can exercise any action on the cornea while the longitudinal portion of the muscle having its origin near the sclerocorneal margin, is fixed at this point, so that when it contracts, its action is to bring the parts situated at its insertion in the direction of the origin of that muscle, that is, the movement is forward rather than backward Thus it can have very little if any action in altering the shape of the cornea

The radius of curvature of the cornea when seen through the ophthalmometer, sometimes appears to change to a slight degree, but this can be caused by ever so slight a movement of the patient's head if it is not held absolutely firm against the head-rest of the instrument.

In referring to the indexes of refraction of the different mediums of the eye, our correspondent is confusing refraction with accommodation No one will deny that the cornea and other mediums of the eye have much to do with refraction, but the mechanism of accommodation is an entirely different thing The illustration used—of the absence of accommodation after the removal of the lens—proves conclusively that this act was accomplished by the lens, and loss of accommodation in an eye that has received a blow, when 'the pupil is dilated with all the eye structures apparently intact" indicates that the blow destroyed that branch of the third nerve which supplies the ciliary muscle and the sphincter iridis resulting in the dilated pupil and absolute loss of accommodation —Ed]

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted on request

MECHANISM OF DEATH IN NEPHRITIS ARTERIOSCLEROSIS AND ERYSIPELAS—EFFECT OF GROUND GLASS

To the Editor —A medical witness was asked in court to describe to the jury the mechanism of death in (1) chronic nephritis (2) arteriosclerosis and (3) *erysipelas.* (4) Now and then I read and hear of ground glass being employed because of its celerity of action I have always thought this to be one of the many semimedical myths and shall appreciate an explanation of this belief

C P Frischbier M D Brooklyn

Answer.—1 It is believed that the cause of death in chronic nephritis is poisoning with the substances, their derivatives and antecedents which with healthy kidneys, are excreted by the urinary organs The alterations in the body following death from nephritis indicate that there is a failure of the heart to maintain the circulation and that this is accompanied by severe alterations in the central nervous system. The exact mechanism of death in nephritis will be better understood when the chemistry of this poisoning is fully demonstrated

2 Death from arteriosclerosis when uncomplicated by other serious diseases such as cerebral hemorrhage extensive renal alterations etc., is usually death from old age," although its development varies greatly according to the age of the individual The ultimate mechanism is, of course, not the same in every instance.

3 Death from erysipelas is, if uncomplicated, due to the poisonous action of the toxins of this disease. The chemical nature of the toxins being as yet unknown, the mechanism of their action is unexplained

4 Ground glass is mentioned among the mechanical poisons in comprehensive works on forensic medicines and toxicology A finely ground glass like meal is regarded by some as harmless When coarsely ground the mechanically produced lesions of the lining of the gastro-intestinal canal resemble a catarrhal and hemorrhagic inflammation Death may be due to perforation of the stomach or bowel or to infection of the wounded places and extension of the inflammation

FRAUDULENT CANVASSERS AND COLLECTORS

To the Editor—Have you any agents or representatives of the poor student type who are making Herculean efforts to work their way through college by soliciting subscriptions to The Journal? This territory has been pretty well explored by an individual who professed to be authorized to solicit subscriptions He claimed o be representing the Michigan Educational Association of 503 Woodward Street Detroit May I hear from you in regard to this matter?

Henry T Kelly M D, White Plains, N Y

Answer.—We have repeatedly published warnings against fraudulent canvassers and collectors—sometimes in the Miscellany sometimes in the News and sometimes in the Editorial department We print the foregoing letter again to emphasize—and under Queries and Minor Notes—the need of being on the watch for this class of swindlers This letter from Dr Kelly is merely one of many which we have received

In the past we have referred specifically to this scheme operated under the title "Cornell Educational Association,' according to which the solicitor presents himself as a contestant for a scholarship offered by an organization of this name. The same plan is worked under other names, as for instance the "National Educational Association," the "Michigan Educational Association," etc The form used in the last-named plan was reproduced in The Journal, Oct 23, 1915, p 1472

ANAPHYLAXIS TO EGG ALBUMIN

To the Editor —Recently I was consulted by a patient who was unable to take the smallest amount of egg in any form. If a spoon was used to beat eggs and then to stir his coffee he became very much nauseated and vomited violently, the symptoms being much like anaphylactic shock Would injections of small quantities of egg at first with gradual increase of dosage create a resistance? F C Hodges M D, Richmond, Va

Answer.—Such instances are typically anaphylactic and, therefore, susceptible to the same type of treatment as other instances of anaphylaxis The following are references to recent literature on the subject

Besredka A and Bronfenbrenner, J Anaphylaxis and Antianaphylaxis to Egg Albumin *Ann de l Inst Pasteur* May 25 1911

Koessler K K Bronchial Asthma Due to Hypersusceptibility to Hen s Eggs *Illinois Med Jour* January 1913

Lesné E and Richet, C. Alimentary Anaphylaxis to Eggs *Arch de méd d enf* February 1913

Miller S R. Koplik s Spots on Tonsils of a Child Found to be Anaphylactic to Egg Albumin *Bull Johns Hopkins Hosp* March 1914

Bronfenbrenner, J , Andrews V L. and Scott, Z R. Nature of Idiosyncrasy to Egg Protein in Human Beings, The Journal April 17 1915 p 1307

Rich H M Infantile Sensitization to Egg Albumin *Michigan State Med Soc Jour* November 1914

Talbot, F B Asthma in Children Its Relation to Egg Poisoning *Boston Med and Surg Jour* Nov 5, 1914 abst The Journal Nov 21, 1914, p 1880

ANESTHESIN

To the Editor—What is the composition of anesthesin? Does it contain any narcotic or cocain? Is it under the ban of the Harrison Narcotic Law?

Charles W Knox M D Indianapolis

Answer.—Anesthesin is ethyl aminobenzoate, the ethyl ester of paraminobenzoic acid As stated in New and Nonofficial Remedies (p 30), anesthesin is one of the products which owe their existence to the discovery that the local anesthetic action of cocain is due to the radical of benzoic acid in combination with a nitrogen-containing basic group On the whole, however, the constitution of anesthesin differs widely from that of cocain

Treasury Decision 2194 requires the registration of any 'artificial substance or preparation which is or may be substituted for cocain, alpha or beta eucaine, or any of their salts as ordinarily prescribed or used, and not necessarily to a purely synthetic substitute which, chemically is identically the same as the drug for which it may be so substituted This ruling evidently is intended to include anesthesin

Medical Education and State Boards of Registration

COMING EXAMINATIONS

California Los Angeles, December 14 Sec., Dr Charles B Pinkham, Room 527 Forum Bldg, Sacramento

Delaware Dover and Wilmington, December 14 Sec, Dr H W Briggs, 1026 Jackson St, Wilmington.

Florida Jacksonville, December 7 8 Sec, Dr E W Warren, 102 Front St., Palatka

Kentucky Louisville, December 7 9 Sec., Dr A T McCormack, Bowling Green

Louisiana New Orleans, December 2-4 Sec., Dr E. L. Leckert, 716 Macheca Bldg, New Orleans.

Maryland Regular, Baltimore, December 14 Sec, Dr J McP Scott, Hagerstown Homeopathic, Baltimore, December 15 16 Sec, Dr O N Duvall, 1817 N Fulton Ave, Baltimore

Missouri St. Louis, December 13 15 Sec., Dr J A. B Adcock, State House, Jefferson City

Ohio Columbus, December 7 9 Sec., Dr George H Matson, Columbus

Virginia Richmond, December 14 17 Sec, Dr J N Barney, Fredericksburg

Medical Cults in Ohio

In Ohio the medical cult situation has about reached the limit of absurdity Fourteen of these cults are specifically mentioned in the new license law, and others are provided for by the terms "any other similar branch of medicine and surgery that may now or hereafter exist and not here specified" The Ohio legislature did a sane thing, however, in having them all placed under the jurisdiction of the state board, thereby placing supervision of all practitioners of the healing art in a single board In no other way would the public be protected against gross ignorance and incompetence on the part of practitioners of these various cults Needless to say, the Ohio board will have its hands decidedly full It has become its duty to work out many of the details for the control of these cults, and its experiences will undoubtedly be of value to other state boards, which sooner or later may have to deal with the same problems At a recent meeting of the Ohio board, official definitions[1] were adopted for each of the medical cults, which have been classified in five groups as follows

Group 1

Chiropractic is understood to be the detecting and adjusting by the hand of vertebral subluxations

Naprapathy is understood to be the detection and correction, by the hands only, of diseased spinal connective tissue or ligaments

Spondylotherapy is understood to be the examination, by palpation, of the spinal column for disease and its treatment by percussion, traction, vibrotraction, or vibration, and concussion

Electrotherapy is understood to be the administration of electricity in any form for the relief or cure of the sick

Hydrotherapy is understood to be the administration of water for the relief or cure of the sick.

Neuropathy is understood to be the specific treatment of the nerves by manual or physical therapeutic measures

Mechanotherapy is understood to be the administration of manual, physical or mechanical therapeutic measures for the relief of the sick.

Group 2

Suggestive therapy is understood to be the treatment of disease by suggestion

Psychotherapy is understood to be the treatment of disease by making mental impressions or suggestions

Magnetic healing is understood to be the treatment of disease by applied suggestion

Certificates authorizing practice under Group 1 or Group 2 permit the holders to examine and diagnose, and to assume responsibility for the care of the patient, but the holders must limit their practice to the branch or branches of medicine or surgery specified in the certificates.

Group 3

Massage is understood to be a systematic therapeutic friction stroking, kneading, or manipulation of the body

Swedish movement is understood to be the treatment of disease by movements or exercise.

The two foregoing classifications include

Medical gymnastics, which is understood to be systematic therapeutic muscular exercises

Vibromassage, which is understood to be massage by rapidly repeated light percussion with a vibrating hammer or sound.

Electromassage, which is understood to be massage by means of an electric vibrator

Heliotherapy, which is understood to be the exposure of the body to the sun's rays, or to the rays of light, as a therapeutic measure

Thermotherapy, which is understood to be the application of heat as a therapeutic measure.

Electric light bath, which is understood to be the exposure of the body to electric lights, or other therapeutic rays, as a therapeutic measure

Certificates authorizing practice under Group 3 do not permit the holders to examine, diagnose or assume responsibility or care of patients Holders of these certificates must limit their practice to the branch or branches of medicine or surgery specified in the certificates

Group 4

Chiropody is understood to consist of surgical treatment of ailments of the hand or foot, nonsystematic or infected in character It shall also include the fitting, prescribing or recommending of appliances, devices or shoes for the cure, correction or relief of minor foot ailments

Certificates authorizing the practice of chiropody permit the examination of the appropriate parts and diagnosis, but do not confer the right to operate on the hands or feet for congenital or acquired deformities, or for conditions requiring the use of general anesthetics or which require incision below the level of the skin Holders of certificates authorizing the practice of chiropody must conform in their practice to the definition of chiropody as here given

Group 5

Optometry is understood to be the employment of any measure other than the use of drugs, for the measurement of the powers of vision and the adaptation of lenses for the aid thereof

Certificates authorizing the practice of optometry permit examination of the eye, but aside from the fitting of glasses do not permit any treatment of whatever nature for diseased conditions either local or general Holders of certificates authorizing the practice of optometry must conform to the definition of optometry as here indicated

Limitation of Practice

Those who receive licenses to practice one or more of these branches will be limited closely to the practice of the branches specified in their certificates, in conformity with the definitions as herein given, and will not be permitted to practice any other branch—even though the second branch is in the same grouping For example, a man licensed to practice spondylotherapy will be forced to confine his practice to the "examination, by palpation, of the spinal column" for the cause of the disease, and will also be permitted to treat "by percussion, traction, vibrotraction or vibration and concussion" He will not be permitted to administer electric treatments, unless he is also licensed as an electrotherapist, or to use hydrotherapeutic measures, unless he is also licensed as a hydrotherapist In his practice he will be confined strictly to the definitions given above, and encroachment on other fields will subject him to revocation of his limited license This point will be emphasized by the parchment licenses to be issued by the board They will bear in bold letters an exact statement of what the practitioner may do

Educational Requirements

The board has established minimum educational requirements for those who seek to enter any of the "limited fields" after Oct. 1, 1915, the final date fixed for applying under the exemption clauses These requirements, as announced by the board, are as follows

Groups 1 and 2

Those who make application to practice any limited branch or branches of medicine or surgery under Group 1 or 2 after Oct 1, 1915, must submit documentary evidence of

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[1] As published in the Ohio State Medical Journal, September, 1915, with modifications by the Ohio State Medical Board

(a) Preliminary education received prior to entering on the study of a limited branch of medicine or surgery equal to that required of medical students prior to entering on the study of medicine, such requirements to be passed on by the entrance examiner of the state medical board in accordance with Section 1270, General Code of Ohio, and (b) satisfactory completion at a recognized school of a course of study consisting of

1 At least two years of thirty-two weeks each, exclusive of holidays and vacations, in two separate calendar years, spent in the study of anatomy, physiology, chemistry, bacteriology, pathology hygiene and diagnosis such as has been prescribed by the state medical board as the minimum requirement for medical colleges

2 A third year of study at a recognized school including preventive medicine, symptomatology, diagnosis, pathology and therapeutics as it relates to the appropriate limited branch of medicine or surgery, certificate to practice which is applied for

3 After having met the requirements of *a* and *b*, and after having satisfied the state medical board concerning the character and moral standing the candidate must also pass a licensing examination, conducted by the board

GROUP 3

Those who make application to practice any limited branch of medicine or surgery under Group 3 after Oct 1, 1915, must submit documentary evidence of

(a) Preliminary education equal to the first two years of a first-grade high school course of Ohio, and (b) satisfactory completion of a course of study in the appropriate branch in a school recognized by the state medical board giving a course of practical and theoretical instruction in and an approved amount of, anatomy, physiology chemistry bacteriology and hygiene, covering an instruction period of not less than four months

(c) After having satisfied the board concerning the character and moral standing the applicant must also pass a licensing examination conducted by the state medical board.

GROUP 4

Those who make application to practice chiropody after Oct. 1, 1915 must

(a) Show proof of preliminary education equal to the first two years' work of a first-grade high school of Ohio

(b) Submit a diploma from a school or college of chiropody, recognized by the state medical board

(c) Pass a licensing examination conducted by the state medical board, after having satisfied the board concerning the character and moral standing

GROUP 5

Those who make application to practice optometry after Oct. 1 1915 must have completed two years of high school, submit a diploma from a school or college of optometry recognized by the state medical board, and must pass a licensing examination conducted by the state medical board after having satisfied the board concerning the character and moral standing

The requirements for those who seek to practice in Groups 1 and 2 are higher than in the remaining three. Candidates to practice in these groups must have completed a high school course, must have spent at least two years in a recognized medical school in the study of the fundamental medical sciences, and must have taken a third year in a cult school *recognized by the board* Those who seek to practice massage movements must have completed at least two years of high school work and have taken a course of at least four months in a recognized massage school, including a small amount of work in anatomy, physiology, chemistry bacteriology and hygiene The requirements for chiropody (Group 4) and optometry (Group 5) are practically the same, with the exception that the length of the course is not mentioned and will later be fixed by the board The reason for this variation in required qualifications lies in the fact that those who seek to practice under the first two groups set themselves up as "healers," ready and anxious to treat all conditions not specifically prohibited by the law Chiropodists, masseurs and optometrists do not take in such a wide field

Georgia June Report

Dr C T Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta and Augusta, June 2-4, 1915 The total number of subjects examined in was 10, total number of questions asked 100, percentage required to pass, 80 The total number of candidates examined was 172, of whom 162 passed and 10 failed Fifteen candidates were licensed through reciprocity The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Birmingham Medical College		(1913) 81 (1914) 80 8, 84 2, (1915) 82 4, 83 86 3 86 7 89 6 91 5
Atlanta Medical College		(1914) 82 5 86 7, (1915) 80 1, 80 7 81 5, 81 7 82, 82 8 82 9 83 1 83 1, 83 5 83 7, 84 2, 84 2 84 3, 84 4 85 2 85 2 85 3 85 3 85 4, 85 4 85 4 85 5, 85 5 85 5, 85 5, 85 8 85 8 85 8 86 86 86 2 86 4, 86 4 86 4 86 5, 86 6, 86.6, 86 7, 86 8, 86 8 87, 87 3 87 5, 87 5 87 7 87 7 87 7, 87 8 87 8 87 8, 87 8 87 9, 88, 88 88 1, 88 1, 88 2, 88.2 88 2, 88 2, 88 2, 88 4, 88 4, 88 4 88 5 88 5 88 6 88 7, 88 7 88 9 89 89 2, 89 2, 89 2 89 5, 89 5 89 6 89 6 89 6, 89 7, 89 8, 89 8, 89 8 89 9, 90, 90 1 90 1, 90 2 90 6, 90 7 90 8, 90 9, 90 9, 91 91 2 91.2, 91 5 91 5 91 6, 91 6 91 7 91 9, 91 9 92, 92 92.2, 92 8 93, 93 1, 93 2 94 7, 95 2
Georgia College of Eclectic Med and Surg	(1914)	89 4
Southern College of Medicine and Surgery	(1913)	88
University of Georgia	(1915)	81 1, 82 9 83 1 84 8 85 3, 85 7, 87 9, 89 6, 90 2 90 9, 92, 93 3
Chicago College of Medicine and Surgery	(1915)	91 6
College of Physicians and Surgeons Chicago	(1912)	85
Rush Medical College	(1915)	92 2
Johns Hopkins University	(1905)	94
Tufts College Medical School	(1914)	82 4
Leonard Medical College	(1892)	83 5
Jefferson Medical College	(1911)	88 1
University of Pennsylvania	(1914)	96.2
Meharry Medical College		(1912) 84 (1915) 80 80, 80 1, 80 2 83 1 83 9, 86 3, 87 3 87 4, 88 7, 88 7 91 3, 91 3
University of Tennessee	(1914)	80 7
University of Toronto	(1907)	90 5

FAILED

College	Year Grad	Per Cent.
Atlanta Medical College	(1915)	78 3
Bennett Medical College	(1914)	76 4
Knoxville Medical College	(1908)	74 1
Meharry Medical College		(1908) 64 4 (1912) 75 7 (1914) 73 4 76 1 (1915) 74 1, 74 9, 75 6

LICENSED THROUGH RECIPROCITY

College		Year Grad	Reciprocity with
Kentucky School of Medicine		(1891)	Kansas
Tulane University of Louisiana	(1913)	(1914)	Louisiana
Johns Hopkins University		(1913)	Virginia
Central Medical College of St Joseph		(1903)	Nebraska
Marion Sims College of Medicine		(1892)	Iowa
North Carolina Medical College		(1902)	N Carolina
New York Med Coll and Flower Hosp		(1913)	New Jersey
Jefferson Medical College		(1912)	W. Virginia
University of Pennsylvania	(1896)	(1912)	Penna
University of Tennessee		(1914)	Arkansas
Baylor University		(1914)	Texas
University of Vermont		(1908)	Vermont
University of Virginia		(1911)	Penna.

North Dakota July Report

Dr G M Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the practical, oral and written examination held at Grand Forks, July 6-9, 1915 The total number of subjects examined in was 13, total number of questions asked, 110, percentage required to pass 75 The total number of candidates examined was 11, of whom 7 passed and 4 failed Eleven candidates were licensed through reciprocity The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Rush Medical College	(1902) 78 8 (1915)	82
University of Louisville	(1910)	77
John A. Creighton Medical College	(1912)	75 5
Vanderbilt University	(1915)	75
University of Manitoba	(1915)	83 83 5

FAILED

College	Year Grad	Per Cent.
Chicago College of Medicine and Surgery	(1915)	72
University of Illinois	(1914)	69 1
Starling Ohio Medical College	(1913)	69 9
Milwaukee Medical College	(1912)	73

LICENSED THROUGH RECIPROCITY

College		Year Grad	Reciprocity with
Hahnemann Medical College and Hospital Chicago		(1909)	S Dakota
Northwestern University	(1909) Minnesota	(1911)	Illinois
Rush Medical College	(1912) Minnesota	(1914)	Illinois
University of Illinois		(1911)	Illinois
Indiana Medical College		(1906)	Indiana
University of Minnesota		(1912)	Minnesota
Barnes Medical College		(1907)	Illinois
John A. Creighton Medical College		(1912)	S Dakota
University of Pennsylvania		(1877)	Iowa

Book Notices

Peroral Endoscopy and Laryngeal Surgery By Chevalier Jackson, M D, Professor of Laryngology, University of Pittsburgh Cloth Price, $5 Pp 705, with 496 illustrations St. Louis The Laryngoscope Company, 1915

The author carefully describes the technic of bronchoscopy and esophagoscopy, and gives good descriptions of the parts visualized Of special value is his discussion of the subject of anesthesia He has been a constant advocate for avoidance of anesthetics when possible, even those local in effect, in these operations In the early part of this kind of work few surgeons realized that a considerable number of operations could be done with very little discomfort to the patient and with much more safety without the use of any anesthetic, especially in children In many other cases only a small amount of a local or general anesthetic is desirable The volume is not limited to bronchoscopy and esophagoscopy, but treats quite fully the various surgical affections of the larynx, air passages and esophagus The reader will be disappointed in the lack of authentic information regarding the mortality in operative procedures for the removal of foreign bodies from the air passages, and many operators will be surprised at the optimistic views on the results of treatment and surgical measures that appear to pervade the whole book Although the author has been phenomenally successful in his own work we think it would have been better if the gravity of these procedures had been duly emphasized On page 319, in a discussion of unsuccessful cases of bronchoscopy for foreign bodies, a slip of the pen is probably responsible for the following statement "The cases where bronchoscopy has failed have been limited to cases in which the foreign body could not be found, and these have invariably been very small bodies far down and far out at the periphery" The latter part of this sentence overlooks some cases of comparatively large foreign bodies that have entered the bronchus leading to the upper lobe of the lung The statement on page 320, "In case of small foreign bodies far down and far out at the periphery, after two expert bronchoscopists have failed to find the foreign body, the intruder should be removed by external operation, and the sooner after bronchoscopic failure the better," does not seem to be justified by experience, when we realize that such patients often live for years without operation and with little discomfort, and that the external operation is often unsuccessful and may prove fatal In such cases, the question whether or not an external operation should be recommended would depend on many conditions that are not here considered Again the possibilities of careful fluoroscopic bronchoscopy are not considered The work is elucidated by means of numerous case records, which often prove of the greatest value to an operator The volume is beautifully illustrated and contains an exceptionally good index.

The House Fly A Slayer of Men By F W Fitzsimons, F Z S, F R M S, Director, Port Elizabeth Museum Boards Price, 35 cents Pp 89, with illustrations New York Longmans, Green & Co, 1915

The warfare against the house fly seems to be going on in all lands The most effective as well as the most necessary campaign method is the education of the people as to the nasty habits of the fly and the dangers of associating with him The human race has for so long regarded him as an inevitable household companion that it is first necessary to convince people that the fly is neither desirable nor necessary as a room mate This is both effectively and interestingly done by Fitzsimons His object is to furnish a small book of a popular nature within the financial reach of everybody In the ninety pages of the little volume are all the essential facts regarding flies, their origin, habits and dangers, and methods for preventing and destroying them, all told interestingly and well illustrated While not so greatly needed in this country, in which the antifly campaign started and in which it is still several years ahead of any other country, this little book will undoubtedly be of great value in the antifly campaign in England

Miscellany

Scarcity of Drugs in Austria

The *Wiener klinische Wochenschrift*, September 23, publishes a communication from the Pharmacologic Institute of the University of Vienna which embodies the results of investigation of the supplies of drugs in Austria It comments on the effect of the war on the drug trade as not only preventing importation of drugs formerly procured from abroad, but also as affecting and reducing the production of medicinal preparations and drugs in the home country This entails a scarcity of many drugs, and this scarcity can only increase with the duration of the war It is emphasized, however, that the foregoing applies only to the civilian population "The military authorities," it continues, "foresaw this lack of drugs and made provision accordingly, so that a scarcity of drugs in the army medical department is scarcely to be feared" By inquiring at hospitals and wholesale drug houses and pharmacies, the present supply on hand has been estimated, and a number of substitutes are proposed for the more important drugs "Digitalis purpurea has hitherto been imported, mostly from Germany, but the German empire has now prohibited its further exportation, and there is a possibility of a dearth of this drug In its place can be used the various preparations of digitalis, of which there are large supplies on hand Or strophanthus can be used as long as the supply holds out" The yellow flowering digitalis grows in Austria, and is said to have the same qualitative action as digitalis purpurea

To forestall a lack of camphor, physicians are advised to reserve camphor for internal use, and order other substances, such as spirit of mustard, instead of camphor rubs "Ipecac and senega are drugs of foreign origin, the importation of which has been cut off by the war In their place are recommended soap-bark (cortex quillajae) and the root of *Saponaria rubra*, in decoction, the dose of the quillaja being a third or a fourth of the senega dose, and of the root of the *Saponaria rubra* the same as the senega dose

"The conditions in regard to opium may be changed by importation of Turkish opium, but at present the supply is scanty, and rigid economy in prescribing morphin and codein is recommended Also the use of the synthetic preparation papaverin, in place of morphin, when cramps of nonstriated muscle are the indication for the sedative.

"Senna, aloes and jalap are also of foreign origin Castor oil came from France and Italy, and the supply is entirely exhausted In their place the use of phenolphthalein preparations and of purgative mineral waters or their salts is recommended Frangula grows in Austria, and its extract ranks with cascara The use of frangula is commended not only for the present, but also later, to promote its home production Austrian rhubarb contains only about half as much of the essential element as the Chinese, so the dose must be doubled

"There is a limited supply of atropin and scopolamin on hand, so they must be sparingly prescribed The production of these alkaloids and also of salicylic acid and its preparations might well be undertaken in Austria, as the mother substances, belladonna, hyoscyamus and datura, as well as phenol are on hand in sufficient amounts and the manufacture does not present insuperable difficulties

"Apomorphin is to be replaced by other emetics, such as copper sulphate Physostigmin must be used sparingly The obstetric and gynecologically important drug, hydrastis, is at present hard to obtain, and the supply of the drug and of its alkaloids threatens to run out completely As a substitute should be used the cheaper and fully as effectual synthetic, hydrastinin, and the preparations made from it The antipyretics, pyramidon and its synonymous trade names, amidopyrin, dimopyran, also antipyrin, phenacetin and antifebrin (acetanilid) are none of them of domestic manufacture, and their exportation has been prohibited The supply of some of them is already exhausted, so that other drugs will have to be used in their place The same applies to aspirin and its chemical equivalent, acetylsalicylic acid, which are no longer allowed to be exported

"Among the drugs used for external application, both sulphur and iodin have been cut off Economy in the use of each is therefore recommended. Instead of iodin, so far as surface disinfection is concerned bromin, which is cheaper, should be used dissolved in chloroform or benzin A 5 per cent alcoholic solution of tannic acid is proving useful likewise for this

'In place of Peruvian balsam the supply of which is now cut off we have at our disposal ichthyol and its preparations (thiol, thigenol etc.) as well as the tar preparations on the market for surgical use.

'The pure zinc oxid of the Austrian Pharmacopeia (zincum oxydatum albissimum) is not produced in Austria, and its exportation is prohibited For external use the domestic zincum oxydatum venale can be used instead, if the contaminating lead content does not exceed 0 5 per cent.

"There is no lack of disinfectants, boric acid which is not to be obtained can thus easily be dispensed with

"A word in closing on another matter which affects the prescribing of drugs that is the question of proprietaries—*das Spezialitäten-Wesen oder besser gesagt Unwesen* These manufactured specialties are put up ready for use in specified doses and they are composed of at least two ingredients On account of their durability and convenience, there is nothing to be said against the use of simple remedies put up in compressed form (tablets pastilles, etc) in exact dosage and generally with the addition of some indifferent constituent It cannot be denied that some of these ready-made combinations of drugs are well chosen But the overwhelming majority of proprietary pharmaceuticals are made up so irrationally that the physician who prescribes them—regardless of all other phases of the matter—reveals the low level of his knowledge. It is time for physicians to break with this mode of prescribing which has no advantage except that of convenience" The communication is signed by Profs J Moeller and H H Meyer, both authors of well-known textbooks on materia medica

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Scarcity of Drugs in Sweden

The authorities in Sweden have issued an official circular addressed to all physicians in regard to being economical in prescribing drugs The circular refers to one issued April 23 1915 in which all physicians dentists and veterinarians were enjoined to observe rigid economy in prescribing drugs and the drugs were enumerated which were the most difficult to procure and with which all concerned would have to be most sparing in their use The new circular states that this admonition has hitherto been willingly followed and hence the work of the authorities to keep the country's supply of drugs from becoming depleted has been materially aided In the meanwhile, circumstances have changed, so that the exportation of practically all drugs has been forbidden, but arrangements have recently been made with certain foreign authorities in regard to the importation into Sweden of supplies of drugs calculated to meet the need for half a year The Swedish authorities appeal to physicians, dentists and veterinarians to use the greatest possible economy in prescribing drugs The amount of the drug prescribed must be calculated for the patient's indispensable need and no more. Besides this the drugs that are obtainable in Sweden should be given the preference, and when a drug of foreign origin has to be prescribed the least expensive should be chosen so that the financial limit set by the exporters should be approached as slowly as possible.

Foreign proprietaries and medicinal preparations with protected names should be used as little as possible, and in their place Swedish preparations should be prescribed or the chemical equivalents as given in a list enclosed. The circular emphasizes the importance of heeding exclusively the recommendations of this list.

Medicolegal

Fraud in Statements About Medicines

(United States vs American Laboratories (U S), 222 Fed R 104)

The United States District Court for the Eastern District of Pennsylvania in denying motions in arrest of judgment and for a new trial after the defendant had been convicted of violating the Food and Drugs Act and the amendment thereto, says, among other things, that the first three counts of the indictment were under the original act, and charged different acts of misbranding, or false and misleading statements respecting the composition of a medicine put out by the defendant under the trade-name of "Bad-Em Salz." The fourth count was under the Sherley amendment to the original act, and charged the offense of making false and fraudulent statements as to the curative properties of the salts manufactured by the defendant. The case was fully and exhaustively tried and defended, resulting in a verdict of guilty

The first complaint was an attack on the constitutionality of the Sherley amendment The position was taken that it is beyond the power of congress to make a crime of the act of a defendant in proclaiming his belief in the curative properties of a medicine However, the argument on which this was based is so fully met by the opinions accompanying the ruling in U S vs Johnson, 221 U S 488, that the court does not feel called on to give it further consideration

But over and beyond the specific grounds of complaint lay the broader one that there was no evidence in the case to justify the defendant's conviction of a crime. The situation in this view of it might be voiced in the phrase that the defendant, if punished, would be punished for the crime of medical heterodoxy, and not for any offense against the law In other words, the president of the defendant company, who was himself a physician, advanced a theory, advocated by others as well as by himself, for the treatment of what are commonly known as "gallstone cases" In opposition were eminent physicians and surgeons, and, as the argument might concede, the weight of scientific medical opinion was against him. Inasmuch, however, as the treatment was the subject of controversy, and its efficacy within the domain of opinion, the minority could not be convicted of crime merely because they were outnumbered It is certainly true that a man should not be convicted of fraud merely because he advocates a theory of medicine which at the time has not received the sanction of the indorsement of the medical profession It is equally true that a fraud or a faker cannot escape the consequences of his fraud by the mere fact that some one may honestly believe in the theory which he fraudulently and dishonestly exploits The fact that there was a widely spread disposition among people to give credence to the statement because of a superstitious belief in its efficacy, or indeed such a reputation for the remedy itself as to make people prejudiced in its favor, would not diminish, but would increase the guilt of him who sought to make money by false statements and fraudulent devices

The motive and policy of the law which lies behind legislation of this general kind is highly promotive of public good The evils sought to be removed and prevented spring out of conditions requiring tactful and even delicate treatment Such laws, if arbitrarily enforced, may easily take the form of an unwise dictatorial interference with the pursuits of others There is a natural temptation to overdo by trenching on the domain which properly belongs to the ethics of the medical profession. There is danger, also that the public will come to rely on the protection promised by such laws, and therefore relax individual watchfulness The temptation even to those who cannot fairly be termed unscrupulous is to yield to the suggestions of greed and come as close to the forbidden line as they safely can. The only sure course in the administration of laws of this kind is to leave the determination of guilt or innocence in a given case to the sound judgment of a jury supervised by the wisest scrutiny which the trial judge can give to make sure that no one is convicted without guilt.

Right of State as Against Relatives to Discontinue Free Care of Patients

(In re Clark (Mich), 152 N W R 920)

The Supreme Court of Michigan affirms a judgment requiring Sarah P Clark, whose son was admitted to the state hospital as a patient in 1901, to pay to the state a certain sum for the cost of maintaining the patient at the hospital after the taking effect of Act No 101, Public Acts of 1909, entitled "An act to revise the law relative to the care of the feebleminded and epileptic" The court says that no question was raised concerning the power of the legislature to provide for an enforced contribution from relatives for the support of patients committed to the institution as public patients The only question was whether it was plain that it intended to make the law of 1909 apply to all public patients then in the institution as well as those thereafter received Admitting that the state may cause these unfortunate persons to be segregated and kept and maintained at a public institution, *and may compel relatives to bear*, in whole or in part, the cost of maintenance, it seems clear that it may fix the time when such contributions shall begin It would not lose the right by foregoing its exercise No vested right in a relative to have the free maintenance of a patient continued would arise because for a period the state had freely maintained the patient There is in Act No 101 no language which implies that relatives of patients already admitted as public patients will not be called on to contribute to the expense of maintenance to be thereafter furnished by the state Consequently, assuming the power to exist to enforce contributions at any time, fair construction would make the act applicable to the relatives of those then within the institution, as well as to the relatives of those thereafter admitted

Discovery of Cancerous Condition After Judgment for Malpractice in Discontinued Operation

(Mason, Evans and Keys vs Meloan (Ky), 177 S W R 435)

The Court of Appeals of Kentucky holds the defendants Mason, Evans and Keys, physicians and surgeons, entitled to a new trial after plaintiff Meloan had recovered a judgment against them for $3,500 damages for alleged malpractice in an operation for the removal of a goiter from the plaintiff's neck The court says that the evidence for the defendants showed that they were regarded as competent, skilful surgeons in the community in which they lived and operated It also appeared from their testimony that when they made an incision about half an inch deep for the purpose of removing the goiter and came into contact with a large vein which it was necessary to ligate, it was discovered to be in such a friable condition that it could not be ligated or closed by the usual methods, so that it became necessary to discontinue the operation and stop the flow of blood in the vein by putting pressure on it through packing inserted into the incision Stated briefly, according to the evidence for the plaintiff, the defendants were not competent to perform the operation when it turned out to be more difficult than they had anticipated, and when the condition of the vein was discovered they became alarmed on account of their inexperience and incompetency, and their carelessness in leaving the packing in the wound too long caused an infection to set up that prevented the place from healing, while the evidence on behalf of the defendants was to the effect that the course they pursued and the treatment they adopted was proper, and the trouble resulted from the fact that the plaintiff left the hospital too soon and the wound did not have the proper treatment But, after the trial and the rendering of the judgment against the defendants, another surgeon removed the goiter, discovering, in the course of the operation, a malignant, cancerous condition Then a new trial was sought by the defendants, on the ground that the failure of the wound to heal was due to the cancerous condition of the goiter at the time the operation was attempted by the defendants, and not to any lack of skill or attention on their part. The court thinks that the evidence of the cancerous condition of the goiter was very material evidence in the case for the defendants, and, while it was true that the suit was defended by them on the theory that the wound was progressing nicely after the attempted operation, and would have healed if the plaintiff had remained at the hospital or had given it the proper attention, yet the court does not think this defense should preclude the defendants from obtaining a new trial on the theory that the condition of the goiter at the time they operated, and its failure to heal, was due to the cancerous condition that existed The defendants did not know this condition existed and did not prosecute the operation far enough to discover it, but that it was present when the operation was performed was shown with reasonable certainty by the testimony of the surgeon who afterward operated Probably if the defendants had been more skilful they could have controlled the flow of blood in this vein and have finished the operation, and the evidence for the plaintiff tended to show that the failure of the wound to heal was due to the negligence or lack of skill or want of attention on the part of the defendants However, this was a matter for the jury on another trial There was, the court thinks, sufficient evidence to take the case to the jury, but the new evidence made it clear that the defendants were deprived of a defense on which they were entitled to rely, and which they did not discover until after the trial This new evidence developed facts that might have great weight with the jury in determining the cause that produced the condition of the wound from the time it was made until the date of the trial

Constitutionality of State Food Law Prohibiting Use of Boric Acid

(Price vs Illinois (U S), 35 Sup Ct R 892)

The Supreme Court of the United States affirms a judgment of the Supreme Court of the State of Illinois which affirmed a conviction of Defendant Price of violating the state pure food law The violation consisted of a sale in Chicago of a preservative compound known as "Mrs Price's Canning Compound," alleged to be intended as a "preservative of food," and to be "unwholesome and injurious in that it contained boric acid" The Supreme Court of the United States says that the state has undoubted power to protect the health of its people and to impose restrictions having reasonable relation to that end The nature and extent of restrictions of this character are matters for the legislative judgment in defining the policy of the state and the safeguards required In the avowed exercise of this power, the legislature of Illinois has enacted a prohibition—as the statute is construed—against the sale of food preservatives containing boric acid And unless this prohibition is palpably unreasonable and arbitrary this court is not at liberty to say that it passes beyond the limits of the state's protective authority But the action of the legislature cannot be considered to be arbitrary Its judgment appears to have sufficient support to be taken out of that category Nor can it be said that the legislature exceeded the bounds of reasonable discretion in classification when it enacted the prohibition in question relating to foods and compounds sold as food preservatives It was contended that the statute as applied violates the commerce clause of the federal constitution, the doctrine with respect to sales in original packages being invoked The clear inference from the evidence was however, that the compound was offered for sale at retail in small packages (in envelops) suitable for the consumer, and, nothing appearing as to the character of the shipment into the state, it would be wholly unjustifiable to assume that, in commercial shipments into the state, the small package was segregated or separately introduced Yet if these small packages were associated in their shipment into the state, as they naturally would be, and were subsequently sold separately or in various lots, these separate packages, although respectively in the original envelops, would not be classed as "original packages" within the rule invoked, so as to escape the local law governing domestic transactions It does not appear that the state law as here applied is in conflict with any federal rule

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Chicago, Dec. 27-29
American Physiological Society, Boston, Dec. 27-30
Society of American Bacteriologists, Urbana, Ill., Dec. 28-30
Southern Surgical and Gynecological Association, Cincinnati, Dec. 14-16
Western Surgical Association, Des Moines, Iowa, Dec. 17-18

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held Oct. 6, 1915

The President, DR. JAMES C. WILSON, in the Chair

Some Applications of Physical Chemistry to Problems in Medicine

DR. HENRY LEFFMANN: Under the term "physical chemistry" a vast and intricate science of molecular conditions and transformations has grown up and has begun to throw light in many directions on the problems presented by both living and nonliving matter. The science is abstruse and the facts can only be treated in an elementary way. I will consider two phenomena, "ionization" and the "colloidal state." The phenomena of ionization are concerned especially with the condition ordinarily called solution, the latter term being here limited to fluids produced by association of substances one of which is primarily a liquid. The term "solution" has a much wider significance in physical chemistry, common glass being considered a solution. Until a few decades ago the liquids obtained in dissolving common sugar and common salt in water were designated "solutions." It is now known that the activity of the salt has been materially increased while the sugar has suffered no such change. The sodium atoms of the salt have by the act of solution acquired a positive electrical charge while the chlorin atoms have acquired a negative charge. The proportion of salt thus modified is dependent largely on the mass of water present. The modification of a substance by which it acquires these electrical charges is termed "ionization", the respectively positively and negatively charged elements are termed "ions." The importance of the change lies in the fact that the chemical activity of the substance and the pressure of the solution are much enhanced by it. It is found that the most potent ionizing liquid is water. Generally the degree of ionization is increased by dilution. Interesting explanations of well-known phenomena are now possible under these principles. Boric acid is of the same type as nitric acid, yet is far less active. The difference is due to the fact that boric acid is but feebly ionized while nitric acid is largely ionized. This applies also in the dilution of concentrated acetic and sulphuric acids.

The application of the data of ionization to the interpretation of the action of medicines is complicated by the fact that living protoplasm and membranes have specific selective powers and thus tests in vitro may mislead. For example, under given conditions mercuric nitrate ionizes to a much greater extent than mercuric chlorid, yet the latter is ordinarily more toxic. According to Höber, this is due to the fact that the chlorid is more soluble in the lipoid substances contained in the membranes and thus is enabled to get into contact with the protoplasm of the cells. Another important point is the influence of salts on one another. It is far from being generally true that when a mixture of two or more substances shows no appreciable change of condition, such mixture will have the properties of all the ingredients. An instance is that a mixture of mercuric chlorid and hydrocyanic acid is not equivalent to mercuric cyanid because the substances react in a different manner to the dissolving liquid. Inasmuch however, as other solvents than water act but feebly in ionizing it is not unlikely that an alcoholic solution of mercuric chlorid and hydrocyanic acid would have a closer equivalency to mercuric cyanid than a solution in water. The cyanids afford several striking instances of the anomalous effects of mixtures. These data seem to point to the importance of simplification in prescriptions. Another point brought into prominence by the progress of physical chemistry is the influence of extremely fine division. By dividing a material finely we greatly increase the facility of chemical action. We also confer among other qualities constant self-agitation and easier passage through porous partitions. Medicines that are insoluble or soluble with difficulty in the fluids of the body should be administered in as fine powder as possible. Manufacturing chemists do not always apply the highest principles of physical chemistry in their processes, and hence we sometimes find in drug stores preparations of distinctly inferior quality.

The physical chemistry of colloids is now occupying a vast army of workers. The initiative in this field is due largely to an English chemist Thomas Graham who, in 1861 published the results of experiments on diffusion through membranes, finding that when a mixture was made of two substances one of which was crystallizable and the other not the former would pass rapidly through the membrane, while the other would be held back. He divided substances into two classes "crystalloids" and "colloids." It is now known that a classification of substances into crystalloid and colloid is not fundamental. These are conditions only, and the same substance may assume both states. The crystalline condition probably results when molecular attractions are allowed more opportunity of acting, the colloidal condition results when less opportunity is afforded. Hence we find that crystals are produced by the solidification of a substance from a liquid or gaseous state. Also, the presence of a minute amount of a crystal of the substance in solution will materially promote the separation in crystalline form, acting as a nucleus for the operation of the molecular forces. Whatever may be the effect of uric acid when in the blood or deposited in the tissues, it is a serious interference when separated in the crystalline form from the urine. Experiments made under the supervision of Dr. Martha Tracy of Philadelphia indicate that a full meat diet increases the acidity of the urine. If this is established, it will be an important point, for the principal danger from uric acid is in its separation in the crystalline form in some part of the genito-urinary tract. Such separation is promoted by increased acidity and if a minute crystal is deposited at any point it will act as a nucleus, bringing about further separation of uric acid and of other compounds held in unstable solution in the urine. The administration of alkalies for the prevention of this separation may lead to the precipitation of substances not soluble in alkaline urine. It is obvious therefore, how a full meat diet may cause or aggravate uric acid troubles, although not increasing the output of the acid itself. Knowledge of the nature and properties of colloids enables us to explain many physiologic and pathologic phenomena. Intimately connected with this field of chemistry is the subject of enzymes. These probably form the connecting link of living with nonliving matter. They show colloidal properties and possess high powers of absorption. The problem of the cell is largely a problem of physical chemistry.

DISCUSSION

DR. S. SOLIS COHEN: So far as the physicochemical reactions in the living body are the same as those of the laboratory, we may apply the laboratory findings to the problems of biology—to physiology, to pathology and to therapeutics. But as regards the great and increasing number of the outstanding biologic problems of the day, the value of the unknown factor is so great that we must hesitate. Wolfgang Pauli in an interesting series of studies of the effects of various ions on the living cell investigated their comparative precipitating powers on proteins, and deduced the laws that 1. The effect of a salt on a protein is made up in the main of the algebraic sum of the effects of the individual ions. 2. Anions and cations antagonize each other. Pauli found that sodium sulphocyanid tended to reduce blood pressure and to prevent deposition of calcium in the arterial walls, so that it could be used with good clinical results in cases of arteriosclerosis He found also that sulphocyanids were even more active than iodids in favoring the formation of readily soluble protein compounds with the heavy metals, and thus favoring elimination in cases of chronic poisoning Other considerations enter into this problem, as into that of decalcification, but the whole subject comes under the head of ion-colloid reactions important to pathologist and therapeutist In connection with the subject of sulphocyanid ions, however, the warning should be given that whereas sulphocyanid may safely be administered in doses up to 1 gm daily for sedative and analgesic as well as pressure-lowering effect, yet any compound of the sulphocyanid ion with an ester will produce almost instant death owing to the solubility of the cell lipoids in esters In Pauli's experiments it seems strange to read that nitrate and acetate are ions inhibitive of precipitation, when we daily use nitric acid and acetic acid to precipitate albumin out of urine But in acetic and nitric acids we have according to the modern view, hydrogen acetate and hydrogen nitrate Hydrogen is the cation and if arranged in Pauli's series should be placed as the strongest of all precipitants when ionized Thus, too we find acetic acid a more delicate test for albumin than nitric acid, because the acetate ion has less inhibiting power than the nitrate ion

Dr **Alfred Stengel** Physical chemistry is a very new science, to the best informed a difficult and abstruse one, and one which those of us not technically interested in chemistry and physics can hardly hope to master even in its more elementary particulars Practical physicians, however should know something about the principles of physical chemistry and the newer principles of physics Saline solutions are too often employed with the barest knowledge of the principles involved The use of solutions of greater concentration than the solutions of the body will not bring about the desired results The introduction of hypertonic solutions into the blood stream, as advised by some French clinicians, while carried out apparently without damage, is a questionable procedure An argument in favor of physicians knowing something of the newer science is the principle of absorption in the combat against certain bacteria This is demonstrated in the work of bacteriologists with fullers' earth in the treatment of local infections, in which it has proved of unquestionable value in the matter of diphtheria and typhoid carriers By the administration of fullers' earth the bacteria have been removed in a way that chemical antiseptics are incapable of doing Speculation arises in my mind whether or not the use of some of these insoluble substances may not act in the intestinal tract in this way The work of Ehrlich comes closely on the topic of physical chemistry

Dr **Thomas McCrae** It certainly behooves a clinician to tread warily when discussing the points brought before us tonight One danger to which many of us are exposed not only in respect to the application of physical chemistry, but also in other problems is that of picking up terms without learning their meaning This subject of physical chemistry lends itself to that It is easy to talk about ions and ionization without having a clear idea of what is meant, of colloids and crystalloids, without having any clear conception of their meaning Ionization has a tremendous bearing on the bodily activities Perhaps we are all familiar with the fact that ionization and electrolysis are closely connected "Electrolysis puts life into the proteins" An interesting work is that done by Rogers in the giving of hypertonic solutions in the treatment of Asiatic cholera, in which his results justify the treatment With Dr Stengel I would emphasize the danger of introducing substances under the skin, one example being calcium lactate The danger of such a method cannot be emphasized too strongly In practical medicine we have a great deal to learn from physical chemistry In speaking of colloids and crystalloids we must have some conception of what we are dealing with, must consider how much of the activity of our cells is due to difference in pressure In clinical medicine we should do our best to make use of this knowledge, because it would lead us in many instances to a much more rational therapeusis

Dr **Joseph Sailer** The subject illustrates, first of all, the sympathetic quality of the medical profession in that it must take toll of all the sciences for the understanding of disease and the welfare of the human race The fundamental element in physics, in chemistry, and possibly the universe, is the atom, and it would seem that until we have a clear idea of the structure of the atom we could not go ahead in the solution of these problems Until we have a clear conception of some of the problems of physics we are not at liberty to apply our methods with the idea that we are using a tremendous scientific advance in medicine The application of definite facts of physical chemistry, however, is important, and as in the use of the Roentgen ray and all forms of radioactivity, must be carried out empirically before its value can be determined

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MEDICAL ASSOCIATION OF THE SOUTHWEST

Tenth Annual Meeting held at Oklahoma City, Oct 12 13 1915

The President, Dr. J D Griffith, Kansas City, Mo, in the Chair

Psychic and Somatic Palsies Complicating Pregnancy

Dr. **S Grover Burnett**, Kansas City, Mo A toxic palsy in the pregnant woman endangers her life, her mind and her physical well-being Primiparas are seldom affected An early abortion will prevent a complete attack The pregnant state may slip something in the chemistry of metabolism causing a toxic neural inflammation syndrome resembling that of Korsakoff's disease but differing in the acuteness of the toxemia, more often causing death by attacking the phrenics and pneumogastrics, and by the alcoholic etiology in Korsakoff's diseases, more chronic in character The neural inflammation complicating pregnancy may be confined to a single nerve trunk, to one limb, to all the limbs including the trunk, the diaphragm, one or more of the cranial nerves, or the pneumogastric alone causing death, or to the intercerebral structures, namely, the brain cells and their association nerves, causing only mental symptoms with or without delirium, minus fever Severe and uncontrolled vomiting usually precedes a general paralysis The vomiting is milder or absent in the mild or restricted palsies, indicating a severe or mild underlying toxemia, respectively We must advise against a subsequent pregnancy when a previous hyperemesis gravidarum has occurred, the toxemia is apt to recur in intensified form

DISCUSSION

Dr **G W Robinson** Kansas City, Mo I have had a patient under my care for ten days following pregnancy due to convulsions If I had no history but examined that patient, I should say she has not Korsakoff's disease, but a multiple neuritis She has hallucinations, both auditory and visual, with a confusional state Psychoses resembling dementia praecox are not unusual I have two such cases under my observation at the present time All these cases are due to toxemia There is reduced alkalinity of the blood, if not an acid condition The best treatment is to decrease the alkalies and stimulate elimination by giving large quantities of fluid, a milk diet, and sodium bicarbonate in doses of 120 grains or more, two or three times a day By means of this treatment I usually get good results

Dr **G W Moody**, San Antonio, Texas It is difficult to determine the nature of the toxemia It is not the ordinary toxemia which gives symptoms in other persons quite similar to some of the cases with lactation psychoses and neuroses It could not be the cause because these patients do not eat much and frequently vomit what they do eat It is in those cases attended with the vomiting of pregnancy that complications are more likely to occur, nevertheless it is a toxic condition

The Early Pathologic Changes and Their Relationship to the Clinical Symptoms and Physical Signs in Pulmonary Tuberculosis

Dr. Francis M. Pottenger, Monrovia, Calif. Pulmonary tuberculosis as it affects the apex of the lung is a metastatic infection coming from a focus which may be far distant in other parts of the body. This primary focus is commonly found in the peribronchial glands but may be in other glands, such as the cervical and mesenteric. Often the pulmonary lesion is a renewed activity in an old focus. Under these circumstances we have different conditions present. First as a result of the old chronic process, there is a degeneration of the muscles skin and subcutaneous tissue, and second, increased tone (spasm) in the muscles. If the wasting of the muscles has not been marked, the increased tone may be greater than normal, but if it is marked, the increased tone may not be detectable. Consequently, if we find on inspection and palpation that the muscles are wasted and smaller than usual and that they have an increased tone, and, especially if we find that not only the muscles but also the subcutaneous tissue has degenerated and is not so marked as on the other side of the chest, then we are led to believe that we are not dealing entirely with a new lesion in the lung but with renewed activity in an old process.

Sometimes we are called on to determine whether an increased tone is due to hypertrophy from overwork or to a motor reflex. This can be determined in the following way. If the increased tone be due to overwork, it is most apt to affect the trapezius, levator anguli scapulae and pectoralis and sometimes the rhomboidei. If it be due to motor reflex from the lung the sternocleidomastoideus as well as these other muscles will be involved. In fact, the increased tone will show best, if the lesion be near the apex, in the sternocleidomastoideus trapezius and levator anguli scapulae. When there is sufficient irritation to affect the apical muscles the spasm also shows in the diaphragm in the form of a deficient motility. An increased tone of the apical muscles, particularly when the sternocleidomastoideus is involved, plus a lagging of the side, practically always means a motor reflex from the inflammation in the lung.

DISCUSSION

Dr. L. G. Moorman, Oklahoma City. We must diagnose pulmonary tuberculosis early. Headache is a great aid in making an early diagnosis. We should remember the symptoms that arise from toxins produced by the tuberculous infection such as malaise, lack of endurance, indigestion, loss of weight, increased pulse rate, night sweats, elevation of temperature, and apparent anemia. There is an apparent anemia in tuberculosis.

Dr. F. W. Froehling, Kansas City, Mo. I have seen real cases of apparent anemia in which I was compelled to assume that the patients in question had really too little blood. The quantity was too little, but the constancy of that quantity was all right. A great deal of reflex action is the cause of these apparent anemias.

Caudal Anesthesia (Analgesia) in Genito-Urinary Surgery

Dr. Bransford Lewis and **Dr. Leo Bartels**, St. Louis. The chief advantages of caudal anesthesia are extreme safety and absence of unpleasant or dangerous after-effects as nausea, vomiting, pneumonia, etc. It has enabled us to operate with comparative safety on a class of patients in whom the risk of using general anesthesia would have been too great. Caudal analgesia is also very convenient to use in the office for painful cystoscopies, painful vaginal examinations, etc., and patients are able to go to their homes immediately afterward. Prostatectomy is relieved of one of its greatest objections. The patient goes through the operation without shock, without nausea or vomiting and without menace to heart or lungs and is as comfortable after its performance as he has been before it.

DISCUSSION

Dr. Julius Frischer, Kansas City, Mo. In my experience with spinal analgesia, I have noticed that patients would have headaches following it, and I have tried to relieve this pain by placing three or four pillows underneath the patient's head, and bolstering him up in bed in a half sitting posture. The danger from spinal analgesia is respiratory or heart failure.

Dr. William J. Wallace, Oklahoma City. My experience with spinal analgesia has been limited to one case in which I did a perineal prostatectomy successfully.

Dr. J. D. Griffith, Kansas City, Mo. Several years ago I used spinal anesthesia, not caudal, in seventy-two patients whose pathologic conditions were below the umbilicus. I have tried to use it in dealing with pathologic conditions above the umbilicus but have failed. The last patient manifested disturbances of the nervous system which she had not shown before. The operation was done for the removal of pus tubes. I made up my mind I would quit spinal anesthesia.

Dr. Clifford C. Nesselrode, Kansas City, Kan. A few years ago spinal anesthesia was quite popular in the Kansas City General Hospital. It was resorted to in the case of a woman for the removal of an ingrowing toe-nail. She had complete paralysis of the bowels and rectum following its administration and so far as could be determined at the time it was likely to be permanent.

Dr. Leo Bartels, St. Louis. As far as the danger of caudal analgesia is concerned, there is no more danger from it than from ordinary infiltration anesthesia. There is no connection between spinal anesthesia and caudal analgesia. We do not enter the spinal canal. If we should accidently enter the spinal canal, we can withdraw the needle and change its direction and wait three or four minutes before we make the other injection, giving the opening time to close of its own accord. Spinal anesthesia is the most dangerous of all methods of producing anesthesia, including chloroform.

Dietetic Treatment of Pellagra

Dr. J. Lewis Day, Normal, Okla. Our most successful form of treatment has been dietetic. We have fed our pellagra patients on a diet rich in animal proteins and low in carbohydrates. This has been done regardless of diarrhea or stomatitis. We do not believe that any patient with diarrhea has been made worse by this diet. When a patient is first admitted, castor oil is administered, and then the diet is instituted. Many patients have given a history of having existed on liquid diet for six or eight weeks with progressive weakness and increasing severity of all symptoms. We place such patients on the above-mentioned diet with almost immediate improvement. Patients sleep in the open air when possible and they are permitted to lie down a few hours each day. We do not allow them to sit in the bright sunlight but our experience does not show that the ordinary daylight has any bad effect on the skin lesions. Seasons of the year have seemingly little to do with the progress of the disease, except that during extremely hot weather the response to treatment is slower.

What Are We Doing and What Should We Do for the Feebleminded?

Dr. W. L. Kendall, Enid, Okla. A careful study into the causes of feeblemindedness has shown that it is very largely hereditary, at least two thirds of the cases being the children of feebleminded parents or grandparents or both. Colonization appears to be the ideal method. Under the compulsory education law, all children now come to public attention when they enter school. Placed in colonies which are in reality well-regulated communities, where all these people do all the work that they are capable of doing, and live under conditions that are easy for them, the problem becomes simplified by the persons of intelligence who manage the colony, and these children become happy and harmless. A great many of them can be trained to do many things with their hands. They can carry on much of the work of the colony and become partially self-supporting or even completely self-supporting under direction. The hygiene of the backward child, then includes the recognition of his condition and the treating of him in accordance with his mental capacity.

(To be continued)

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held in Indianapolis September 22 24, 1915

(Concluded from p 1578)

Thoracoplasty for Chronic Empyema

Dr W D Gatch, Indianapolis The first point to determine in any patient having a chronic empyema, which has been thoroughly drained, is whether the lung is capable of expansion if freed from scar tissue To discover this I rely on (1) the amount of uncollapsed lung as determined by stereoscopic roentgenograms, (2) the size of the cavity, (3) the presence of curvature of the spine and overlapping of the ribs, (4) the level of the diaphragm If there is no uncollapsed lung if the cavity is small, the diaphragm in a high position, the spine curved with its concavity toward the affected side, and if the ribs overlap one another or are close together, then I assume that any effort to bring about expansion of the lung is hopeless The problem involved in the treatment is the obliteration of an infected cavity which is surrounded by rigid and poorly vascularized walls The cure is to be accomplished by cutting away the firm walls on at least three sides and applying pliable structures with a good blood supply to the remaining wall The very chronic cases can mostly be cured, barring the presence of bronchial fistula, providing the operation is thoroughgoing

Some Surgical Disorders of the Upper End of the Femur

Dr. B P Weaver, Fort Wayne Bone tuberculosis in the adult, involving as it often does the synovia and hip joint, demands radical treatment, which means resection to the point of removing just enough of the ends of the bones to secure apposition of bare bone to bare bone, producing an ankylosis It is both needless and futile to attempt to remove all the tuberculous tissue, for once the function is arrested cure will follow in the average case under proper hygiene The hypertrophied form, which may cause bony irregularities which interfere very materially with motion, offers an ideal condition for the application of Murphy's hip-joint arthroplasty, wherein the lip, if present, could be removed, the acetabulum reamed out, the irregular head properly rounded off with the end-mill, and recurrence prevented by the interposition of fascia-lata flap Carcinoma of the upper end of the femur is practically always secondary to cancer in some other part of the body, chief among which are the prostate, thyroid and mammary glands, stomach, esophagus and uterus

Uronephrosis

Dr H O Mertz, Laporte By uronephrosis I mean retention of urine in the upper urinary tract Our experience with these cases seems to emphasize the fact that this condition should be recognized early, when constructive surgery may still suffice Urine analysis is of very little value in these cases, and too much reliance on the pain symptom alone will often lead us astray in diagnosis Pyelography has a definite field of usefulness early in the condition, but when end pathology is present it is seldom necessary or justifiable Extreme care must be exercised at operation in interpreting lesions of the upper ureter producing stasis

DISCUSSION

Dr H G Hamer, Indianapolis I would like to emphasize the importance of thorough and complete diagnosis in these cases It is by making use of the cystoscope, ureter catheter, Roentgen-ray and function tests that we can obtain the information for a complete diagnosis The neutral solution of thorium nitrate and sodium citrate is an excellent solution for pyelography It is a clear, clean solution which flows readily through the catheter, is said to be nontoxic and nonirritating, the cost is small, and the shadows are much clearer than those obtained by the use of collargol or other solutions

Dr. P E McCown, Indianapolis It is better to point the way to a diagnosis of uronephrosis before such a condition arises We should look into the bladder and kidney pelvis earlier in all abdominal conditions

Diseases of the Gallbladder and Their Influence on Adjacent Organs

Dr W H Williams, Lebanon The readiness with which a toxic myocarditis or a chronic pancreatitis or the various symptoms of an infective cholangitis yield to prolonged drainage of the gallbladder is extremely gratifying to both patient and physician The dissolving of gallstones by various remedies for which such claims are made is misleading, for they do not do the work claimed for them and valuable time is lost All cases of gallbladder disease are not surgical, but they are medical first and continue so as long as we are getting rapid improvement, free from complications and recurrence of attacks, but if the latter is true we should urge surgical interference without delay

DISCUSSION

Dr Murray Hadley, Indianapolis In regard to the source of gallbladder infection, two theories deserve consideration—that the gallbladder becomes infected by the bile which in turn was infected within the liver, or the gallbladder is infected by way of the lymph stream The point of infection may be at a distance and the bacteria find their way to the lymph stream by the lymph channels within the organ If the gallbladder is infected by the bile or by an ascending infection, we have a mucous membrane which will permit the organism through it Perhaps the most interesting part of gallbladder surgery is the number of cases in which on operating we do not find stones

Dr Joseph Weinstein, Terre Haute A gallbladder sufficiently diseased to produce symptoms that can be diagnosed, is a surgical condition We are only justified in medical treatment after acquainting our patients with the possibilities and probabilities and their refusal to follow our advice

Dr Charles Stoltz, South Bend When you have made a positive diagnosis of gallbladder disease, operate By surgical treatment of these cases we are not groping in the dark, medically, we are

Dr E H Griswold, Peru We are attributing the cause to the disease and not the disease to the cause The question cannot always be answered by symptoms, for symptoms are conflicting We get the cart before the horse when we lay the matter of gallstones at the door of an infected gallbladder

Dr Vincent A Lapenta, Indianapolis Gastric infections follow all lesions Drain the gallbladder, but inspect the pylorus too—and we will have to operate less often We are getting too far away from the idea that the stomach itself is the cause of disease

Some Considerations in Pelvic Floor Work in Women

Dr W H Baker, South Bend The pelvic floor work of improved methods is not relieving as many of our patients as it should because of the neglect of frequent complications producing like symptoms The round ligaments retard motion but do not hold the uterus in a forward position The lower pole of the uterus must be mobilized in prolapsus uteri and retroversion No operation should be done on the child-bearing woman that would retard the normal motion of that organ Perineal muscles should be stitched only with their fascia covering included in the stitch, and the sutures should be of absorbable material and protected as far as possible from vaginal discharges by an unbroken vaginal mucous membrane In all this work a thorough knowledge of the anatomy and physiology is most important

DISCUSSION

Dr G G Eckhart, Marion If the levator ani muscle, the perineal and rectal fascia, make the lower floor, and the uterosacral and uteropubic fascia and the uterus and its attachments make the upper floor of the pelvis, then the shortening of the round ligaments along for retrodisplacement will not suffice If the uterus has been heavy over a long period of time, backward displaced, shortening the round ligaments and rest in bed for the increased weight may give complete relief No doubt the largest percentage of failures in pelvic floor work are reported in cases where future pregnancy is to be reckoned with

Dr. Goethe Link Indianapolis Prevention is better than cure If compensation for obstetrics were better physicians could spend more time in making deliveries and could more often use professional assistants There would then be fewer bad tears A torn perineum can be made almost as good as new at the primary repair, but it is an operation requiring skilful work good assistance and favorable surroundings We have too many named operations on the perineum and not enough anatomy All our efforts should be toward the restoration of normal anatomy and one pathologic condition should be replaced by another

The Modern Conception of One Form of Nephritis

Dr. Charles P Emerson, Indianapolis Bright's disease is a term used correctly only when applied to the small white, contracted gouty kidney The majority of cases of progressive nephritis are due to acute infectious diseases but the disease will stop unless the infections repeat themselves The pathologic lesion is due not to one infection, but to many not to one trauma but to many One of the most important recent advances is the demonstration that the kidney is capable of some regeneration of its specific elements if only the injurious agent producing the lesion stops its activity In the diagnosis of nephritis the results of the urine examination must be interpreted by the history and physical examination of the patient I feel that in no small degree the present chaos in our ideas of nephritis is the result of the separation of the laboratory examination of the urine and the physical examination of the patient Examine the urine of patients more carefully especially those who are only "neurasthenic' , have more blood cultures made even though the urine be normal and if the patient's urine contains albumin casts or both allow the laryngologist, the dentist and the surgeon to do all they can for your patient before you subject him to the medicinal and dietetic care of chronic nephritis

Toxemias of Pregnancy

Dr. Charles E Ferguson Indianapolis The preventive and curative treatment of nephritis and preeclamptic toxemias are identical Were women trained to put themselves under the care of a physician in the early weeks of pregnancy, the prompt diagnosis of toxemia would be simplified So long as expectant mothers get no more care than that given by the midwife or often not as much as that given to a valuable domestic animal under like circumstances women will die and doctors will struggle with eclampsia and uremia that should have been anticipated and in most cases prevented The urine of pregnant women should be examined for sugar and albumin every few weeks during the first six months and every three weeks during the last three months The blood pressure should be taken from time to time, every patient should be impressed with the significance of dimness of vision spots before the eyes, and particularly severe pains in the epigastrium While it is true that eclampsia sometimes develops during labor without warning the majority of cases reveal neglect of preeclamptic toxemia

DISCUSSION

Dr. H A Duemling, Fort Wayne I would like to emphasize two points—one is the importance of careful and thorough examination of the pregnant woman long before her anticipated confinement becomes due, the second is the looking for perineal tears Physicians are in too much of a hurry, and consequently their patients are brought back to the hospitals where they are helped but never brought to the health they could have had the tears been taken care of at the proper time

Dr A S Jaeger, Indianapolis The best way to prevent eclampsia is to treat it before it occurs which can be done by the general practitioner The men who see these cases only when some imperative emergency exists have not a chance to do anything except that which can be done at once

It a woman is in eclampsia at term then my custom is to deliver as rapidly as possible If she has no pulse and a rigid os I do the cesarean section If eclampsia comes at seven or eight months I believe everything should be done to carry these women to term The use of high forceps is criminal if used on an unengaged head especially when the cesarean section can be done, saving the mother and child

Case of Hysteria from the Viewpoint of the Freudian Psychology

Dr Max A Bahr Indianapolis Hysteria is a psychosis and not a neurosis The psychology of hysteria is the psychology of subconscious states and their method of growth by a process of dissociation of the normal consciousness These subconscious impressions still remain dynamic however, in the life of the individual and later acquire strength to dominate the entire personality These so-called "submerged complexes" are capable of being revealed by means of association experiments and analysis of reveries and dreams New complexes by themselves have influence only in so far as they are indissolubly bound up with emotions of painful content consequently they become dynamogenic and when sufficient energy has been accumulated to overcome the resistance an explosion takes place and the result is the conversion of these complexes into crises such as we find in hysteria We have violent outbursts of excitement, transient deliriums, and a multitude of other sensory and motor expressions—in fact there is hardly a symptom in the category of medicine be it mental or physical which may not present itself at one time or another in hysteria The patient's dreams are symbolic of an inherent trend of the inner life of the individual Psychic phenomena have efficient causes and are as definitely associated with these causes as are physical diseases The technic of psychanalysis is to establish necessary and definite connection between these symptoms and the exciting causes The methods employed vary with the individual needs but the most satisfactory resources at our disposal are association tests and analysis of dreams The association tests give us a ready method of gaining insight into the various complexes as well as a survey of the patient s general psychologic trend, while through analysis of dreams it is possible to enter the various crypts of the unconscious mind and bring to light many of the repressed and hidden experiences The principle of analytic psychotherapy is to overcome mental conflict and make the patient realize the existence and influence of these unconscious and self-condemned desires This psychanalysis cures patients as a result of self-knowledge and ascertaining the cause, although the method of treatment does not alter the neurotic inheritance which nearly all these patients possess When the principles of this new psychology are more extensively known by the general medical practitioner, hysteria will rapidly decrease in frequency, for it is the general practitioner who is the first to come in touch with these patients

DISCUSSION

Dr. Ernest H Lindley Bloomington The emotions are the most vital diagnostic features Ideas move the world but they never move anything until the emotions get behind them and furnish the steam The balking of emotion, the prevention of emotion finding its normal expression, is not infrequently the source of functional disorder and where people live in repression they live at war with themselves and this finds expression in convulsions and all kinds of physical disorders and excesses The great bulk of nervous cases with which the physician has to deal are cases of balked desires and the way out is to find normal expression for the emotions of these people Give them something to do something worth while for themselves and the community and you cure them and at the same time give them their rightful place in society

Dr. Albert E. Sterne, Indianapolis Mind cannot exist independent of matter The mind unquestionably influences the body and it can influence our emotions The most recent experiments indicate that the emotions are physical, that they are biochemical and that their results are as manifest and as definite as any organic clinical entity that we can demonstrate in organs outside of the nervous system and the mind which is its expression To apply psychanalysis wholesale as a method of procedure would be wholly impracticable, not because of lack of ability on the part of the physician, but on account of lack of time and patience to do it. There is danger in psychanalysis applied irrelevantly, as there is danger in any other thing applied irrelevantly. The whole question may be summed up in the one word—self-control. Teach boys and girls self-control—to recognize that the two fundamental principles which guide all animal creation are alive in us and need control, and we will not have many cases of hysteria. It is the individuals who do not exercise self-control that we meet with in the realm of hysteria.

Dr. C. F. Neu, Indianapolis: Psychanalysis has come to stay, but it is not a "cure-all." We get temporary cures, but psychanalysis has not been in application long enough to say whether we get permanent cures or not. This analysis can only be carried out properly in the proper environment and with the proper attention, and that practically can only be obtained in institutional treatment.

Diagnostic Routine in General Practice

Dr. Charles R. Bird, Greensburg: The diagnosis of disease rests on three things: clinical history, physical signs and pathologic knowledge. In addition to noting the pulse, temperature, reflexes, etc., each patient has a right to expect of us a routine which includes nothing less than case history and case record, stripping to the skin, examination of chest and abdomen, urinalysis, blood pressure and hemoglobin percentage. It is not sufficient that we look for some definite pathologic lesion only when we suspect its presence.

DISCUSSION

Dr. William R. Davidson, Evansville: Too many doctors say they have not time to make examinations, but if we practice systematic routine in all examinations beginning with the head and in an orderly, systematic manner going through the entire physical findings, particularly taking a full clinical history and writing it down, we will be surprised how much more accurate knowledge is becoming. We must first know the pathology and then know how to interpret that with the clinical history, for when all is said and done the main thing is the clinical history of the patient.

Dr. A. C. Kimberlin, Indianapolis: Get the facts from the patient first, which is the history, and then get what evidence you can from physical examination, before you prejudice yourself mentally, because there is where we make our errors most frequently—in following a line and keeping after it even at the expense of putting aside something which another person sees in a different light. It is not a matter of what we know, but how we use our knowledge.

Dr. C. S. Bond, Richmond: A man cannot be a diagnostician unless he trains for that work—training his finger tips, his eyes and his ears. I believe the difference between men very largely is the difference in their ability to detect things by hearing, seeing and feeling. Then a man must take time and quietly consider his findings.

Dr. W. A. Fankboner, Marion: We are prone in recent years to lean on the test tube and microscope and blood count and things of that kind. I would not detract from the value of these things, but we must learn primarily to study the patient as a human machine and apply our educated senses to finding out what is the matter with him, using these laboratory methods in a corroborative rather than a primary way. Our success in diagnosis depends on our faculty in interpreting things at their full value.

Benzol in the Treatment of Leukemia

Dr. Joseph M. Barry and Dr. Jane M. Ketcham, Indianapolis: From a study of the literature and from our experience with one case we feel justified in concluding that benzol has a wonderfully selective action in chronic myeloid leukemia, if uncomplicated and not of too long duration, that one can count with considerable assurance on getting a rapid reduction in the number of leukocytes, on getting a normal blood formula, a rapid diminution in the size of the spleen, and an increase in the number of red cells and the hemoglobin percentage, with improvement in the general health of the patient, increase in weight, etc. One should never forget, however, that the drug is a powerful poison and that we must be careful not to carry its effects too far. The patient should be in a hospital, in bed, the gastro-intestinal tract, kidneys and liver should be watched carefully for toxic symptoms, blood counts should be made every few days, the benzol should not be increased in dosage without definite warrant, and its administration should be entirely stopped considerably before the white count has returned to normal.

DISCUSSION

Dr. A. C. Kimberlin, Indianapolis: In the treatment of these cases, the essential point is to be familiar with the temperature curves before beginning active treatment. In the Roentgen-ray treatment we should approach the spleen with care, and feel our way, marking our progress by the temperature, by the pulse and by specially close attention to the mucous membrane of the throat, especially of the tonsils. They have a tendency to take on hydroplastic conditions. Rise of temperature should always be taken into account.

Some Points in the Early Physical Diagnosis of Pulmonary Tuberculosis

Dr. A. C. Kimberlin, Indianapolis: When a case presents the only interest I have is, first, to make a diagnosis, next, if possible, to locate the lesion accurately. Family history is important. Do not take the word of the average patient as to a negative family history of tuberculosis—it is not worth anything. The physical examination is worth just about what one's services are, and that is what you are willing to make it. The first thing one should know in attempting this diagnosis is the anatomy of the chest, next, he should carry a clear picture in his mind of the manner in which pulmonary tuberculosis spreads, then he must know something of the acoustics of a normal chest as well as the pathology of early pulmonary tuberculosis. Percussion and auscultation are our chief and most reliable means of recognizing incipient pulmonary tuberculosis, but auscultation of the voice is of much greater value than ordinarily appreciated, especially if properly practiced and studied. During examination the patient should be at ease, both mentally and physically. He should sit at ease on a chair high enough to bring him on a level with the examiner, or in examining the axillary and subpectoral regions he should lie on a firm table, not a bed or couch with springs under it. We owe an everlasting debt to the roentgenologist for what he can and has done in helping us in our findings, and because he has been our "pace-maker" in teaching the possibilities of a properly made and refined physical diagnosis, but when a physical examiner applies himself, keeping his mind fully concentrated on what he is doing, eliminating all traditional customs of routine physical examination, he is quite able, with the advantage of personal and family history and a thorough clinical history, to arrive at conclusions which are of more practical value to the medical man than would be the findings of the roentgenologist, who only studies a picture showing change in density. A physical examination should be intelligent and conclusive and it should be reliable. One objective sign in diagnosing is worth a dozen subjective symptoms. What a patient tells you may be wrong, but what you find from physical examination, you are responsible for its interpretation and application.

DISCUSSION

Dr. Alfred Henry, Indianapolis: Early diagnosis of pulmonary tuberculosis entails great responsibility on the family physician. You had better say to your patient "You have tuberculosis" if you are in doubt than to say "You have not tuberculosis." If you err it had better be on the other side. If he has tuberculosis he will do something to cure himself, and if he has not, what has he lost by sleeping out doors or with his windows open for a year? One of the landmarks in this diagnosis is the characteristic tired feeling. If that persists for a few weeks or for a month or two, be suspicious. Take your time, give each patient a half hour to an hour instead of a minute, take the temperature a dozen times, examine the sputum a dozen times, and train your ear to hear

Current Medical Literature

AMERICAN

Titles marked with an asterisk ( ) are abstracted below

American Journal of Physiology, Baltimore

November XXXIX No 1 pp 1 130

1 *Physiology of Stomach Mechanism of Regurgitation of Duodenal Contents into Stomach C. J Hicks Jr, and J W Visher Chicago
2 Origin of Proteolytic Ferments of Blood Question of Specific Character of Certain Ferments L H Sloan Chicago
3 Oxygen and Carbon Dioxid Content of Blood During Hibernation in Woodchuck (Marmota Monax) A T Rasmussen
4 Blood Counts in Frog Turtle and Twelve Different Species of Mammals J J Wells and J E. Sutton Jr Ithaca N Y
5 Influence of Oil of Chenopodium on Intestinal Contractility W Salant and C W Mitchell, Washington D C
6 Influence of Stimulation of Depressor Nerve on Suprarenal Secretion A N Richards and W C Wood Philadelphia
7 Respiratory Chamber for Small Animals A C Kolls and A S Loevenhart Madison Wis
8 Mechanism Adapting Oxygen Capacity of Blood to Requirements of Tissues H C Dallwig, A C Kolls and A S Loevenhart Madison Wis
9 *Stimulation of Hypophysis in Dogs R W Keeton and F C Becht Chicago
10 Physiology of Stomach Gastric Hunger Contractions of Normal and Decerebrate Guinea Pig J L. King and H Connet Chicago

1 **Regurgitation of Duodenal Contents into Stomach** —One hundred and fifty c c. 0 5 per cent HCl left in dogs' stomachs for fifteen and thirty minutes caused regurgitation in 38 per cent of fifty-six trials In man an average of 32 6 c c gastric juice (acidity 0 411 per cent) accumulated during twenty minutes' chewing of food caused regurgitation in 40 per cent of ten trials Whereas 100 c c of 0 4 per cent HCl retained in stomach for twenty minutes caused no regurgitation in 100 per cent of ten other cases Duodenal regurgitation following the introduction of 0 5 per cent HCl into the cat's stomach is effected by means of characteristic movements (mostly 'rhythmic pulsations' or 'segmentation movements") in the first portion of the duodenum initiated by the passage of strong HCl into the duodenum and occurring in the absence of extrinsic nervous connections Regurgitation never occurred in the absence of these movements Hicks and Visher claim that antiperistalsis of the duodenum is not concerned in this regurgitation

2 **Origin of Proteolytic Ferments of Blood.**—There is an increased proteolytic ferment action of the blood serum during pregnancy Sloan believes that this increased activity is probably in the main due to an increase in the polyvalent ferments Normal blood serum has a weak nonspecific proteolytic action The dialysis method of Abderhalden or the method of Williams and Pearce does not suffice to demonstrate a ferment developed during pregnancy acting only on placental protein Many advanced pathologic conditions give a positive reaction within the time specified for the Abderhalden test of pregnancy At present the Abderhalden test is a quantitative not a qualitative test

5 **Influence of Oil of Chenopodium on Intestine** —According to Salant and Mitchell oil of chenopodium in dilutions of 1 5 000 and 1 10 000 in Locke s solution produces in the isolated intestine of rabbits a marked decrease of tone which remains permanent and diminishes frequency as well as force of contractions which disappeared altogether in twenty to twenty-five minutes Recovery occurred when the intestinal segments were placed in Locke's solution without oil of chenopodium In carnivorous animals oil of chenopodium usually, but not always causes a preliminary rise of tone followed by a steady decline Rhythmic contractions may increase in frequency, but disappear finally Recovery may take place when the segments are put into Locke s solution The reaction to oil of chenopodium was greater in the ileum than in the duodenum or jejunum but was most marked in the colon Caffein has no antagonistic effect, but may, on the contrary aid depression of tone caused by oil of chenopodium Neither barium chlorid nor pilocarpin has a true antagonistic effect but may prevent to a small extent depression of tone when added before oil of chenopodium Pilocarpin has no action on intestine which has been poisoned by oil of chenopodium, but barium produces an increase of tone Nerve ends as well as muscle fiber are attacked by oil of chenopodium, but the latter is more resistant Relatively large doses of oil of chenopodium are required to inhibit peristalsis in intact rabbits by intravenous injection The presence of substances antagonistic to oil of chenopodium is offered as an explanation

6 **Influence of Depressor Nerve on Suprarenal Secretion** — Richards and Wood are convinced that the processes in the suprarenal gland which are responsible for the discharge of epinephrin into the blood are subject to reflex inhibition by way of the depressor nerves, in a word, the mechanism of suprarenal secretion is involved, not only in pressor, but in depressor reflexes

8 **Mechanism Adapting Oxygen Capacity of Blood.**—The work done by the authors indicates that the increase in erythrocytes and hemoglobin noted by practically all workers at high altitudes is due largely if not entirely to the decreased partial pressure of oxygen at high altitude, but the rapid increases in the blood counts noted in man at high altitude and also the increases noted at comparatively slight elevations is not explained by them

9 **Stimulation of Hypophysis in Dogs** —Keeton and Becht found that electric stimulation of the hypophysis in dogs under insufflation anesthesia gives rise to an increase in the reducing substances in the blood Drilling over the sella stimulates the gland mechanically but not so efficiently as the induced shocks If the stimulation is applied anteriorly or posteriorly to the gland with precautions to prevent an escape of the current to the hypophysis no rise in the reducing substances results This rise on stimulating the gland does not occur in dogs whose splanchnic nerves have been previously sectioned a fact which argues against the liberation of a hormone, which increases directly the cellular glycogenolysis With active diuresis the threshold of glycosuria lies between 0 19 per cent. and 0.21 per cent. reducing power of the blood figured to dextrose Once established the sugar in the urine increases in concentration out of proportion to the reducing power of the blood

American Journal of Public Health, Boston

October V No 10 pp 965 1102

11 Recent Public Health Work in United States Especially in Relation to Infant Mortality J S Neff Narberth Pa
12 Municipal Control of Diphtheria W G McKay Jacksonville Fla
13 Permanent Sediment Records for Water and Sewage G C Whipple and J W M Bunker Boston
14 Statistical Study of Whooping Cough. F S Crum
15 Important Details of Practical Plumbing H Y Carson New York
16 Standardization of Public Health Work W S Rankin Raleigh N C
17 Incubation Time in Culture Diagnosis of Diphtheria A Gehrmann Chicago
18 Apparatus for Accurately Filling Dilution Blanks R Freas Baltimore
19 Outbreak of Cowpox A J Douglas, Winnipeg Canada
20 Rural Sanitation and Uncinaria Disease A G Fort Atlanta Ga
21 Standard Certificate of Birth W A Plecker Richmond Va
22 Action of Certain Bacteria on Nitrogenous Material of Sewage E G Birge Boston
23 Preparation of Ammonia Free Water E J Pugh Philadelphia
24 Report of Committee on Industrial Hygiene and Sanitation of Home J H Landis Cincinnati
25 Report of Committee on Occupational Mortality W F Snow Sacramento Calif
26 Incorrigible Consumptive — Isolation of Persons Ill with Communicable Diseases C Bryant Haverhill
27 Some Inconsistencies in Dealing with Tuberculosis F G Curtis Newton

Annals of Otology, Rhinology and Laryngology, St Louis

June XXIV No 2 pp 193-428

28 Oral Tuberculosis T E Carmody Denver
29 Sinister Unrecorded Anomalies of Sphenoid A W Meyer Palo Alto Calif
30 Pollen Therapy in Hay Fever J L. Goodale Boston
31 Experiments with Autoserum in Treatment of Hay Fever Relation of Anaphylaxis and Eosinophilia to Hay Fever H Hays New York.
32 Accidental Pneumothorax During Tracheotomy Report of Case S Iglauer Cincinnati

33 Simple Manometric Apparatus for Measuring Eustachian Tubal Patency and Tympanic Ossicular Mobility L M Hubby, New York
34 Accidental Injuries of Sigmoid Sinus Inflicted in Simple Mastoidectomy W A Scruton, New York
35 Ethmoidal Exenteration C M Robertson Chicago
36 Use of Pituitary Extract as Coagulant in Surgery of Nose and Throat H Kahn and L E Gordon, Chicago
37 Tuberculosis of Larynx J Holinger, Chicago
38 Choanal Fibroma N H Pierce, Chicago
39 Hammond's Mastoid Skin Grafting F Allport and A S Rochester, Chicago

Boston Medical and Surgical Journal

November 4 CLXXIII No 19 pp 685 722

40 Medicine Profession or Trade H Cabot, Boston
41 *Late Results of Operations on Hip Joints for Hypertrophic Arthritis E G Brackett and H W Marshall Boston
42 Therapeutic Value of Injections of Whole Blood J S Davis Dallas, Tex
43 Massage and Remedial Exercises in Treatment of Children's Paralyses, Their Differentiation in Use J M Colby, Boston
44 Treatment of Acute Infections of Airways by Instillation of Aromatic Drugs I W Voorhees, New York
45 Studies in Speech Disorder W B Swift, Boston
46 Case of Thrombophlebitis of Veins of Cord Associated with Colon Bacillus Infection of Epididymis E G Crabtree, Boston

41 **Operations on Hip Joints for Hypertrophic Arthritis**—The nine cases reported by Brackett and Marshall represent four arthrodeses, one decapitation of the femoral head, three cheilotomies and one arthrotomy for a loose body Results of the four arthrodeses are as follows Three patients were actively at work at the time the last observation was made on them and the fourth person was improved in health The result of the decapitation of the femoral head represented some improvement The three cases in which diffuse exostoses and bony lips were removed from hip joints (cheilotomies) varied considerably in their success One a teamster was at work two years and ten months after operation, having begun again seven or eight months after leaving the hospital The other two patients had both hips operated on and neither had resumed his former occupation One of the two could chore around home and did not need a cane except in the street The third cheilotomy patient was operated on twice and walked with a crutch and a cane seven years after his first operation At the last observation he was in fairly good general health with much less hip pain The first joint treated was still quite serviceable, while the second one was neglected by him in its after care, so that it was badly rotated outward at the last examination This case the oldest of the series, originally had marked changes in both hips and had been disabled for two years His efficiency was increased by surgery but not to the point of work and the main benefit has been relief from pain The one case of arthrotomy for removal of a loose body in the joint probably had a traumatic origin and at operation the joint did not show many other pathologic changes Complete relief followed removal of this body, and the patient could walk easily and painlessly when seen after two years and one month

Canadian Medical Association Journal, Toronto

October V No 10 pp 855 948

47 Disabilities, Including Injuries Caused by Bullets, Shrapnel High Explosives, etc A Primrose, Edinburgh
48 Nonmaterialism in Medicine D F Harris, Halifax
49 Case of Large Celled Splenomegaly (Gaucher Type) H A Bruce and O R Mabee, Toronto
50 Subcutaneous Administration of Fluid in Acute and Subacute Conditions in Infancy R P Smith, Toronto
51 Method of Dealing with Tuberculosis in Public Schools of Toronto F S Minns, Toronto
52 Cholemic Hemorrhage E M Von Eberts, Montreal
53 Typhoid Cholelithiasis and Cholecystitis E M Von Eberts, Montreal

Florida Medical Association Journal, Jacksonville

October, II, No 4 pp 97 128

54 Reflections on Modern Methods of Treatment by Serums and Vaccines W S Thayer, Baltimore
55 Composite Board of Medical Examiners R H McGinnis, Jacksonville
56 Plea for Better Health Organizations in Smaller Municipalities of Florida M E Heck, St Augustine
57 Some Thoughts on School Inspection D C Main, Welaka

Journal of Experimental Medicine, Lancastar, Pa

November XXII, No 5, pp 517 673

58 *Chemopathologic Studies with Compounds of Arsenic. Types of Arsenic Kidney L Pearce and W H Brown, New York
59 *Id Histologic Changes in Arsenic Kidneys L. Pearce and W H Brown New York.
60 *Id Pathologic Action of Arsenicals on Suprarenals. W H Brown and L Pearce, New York
61 Immediate Effects of Reduction of Kidney Substance H T Karsner, H A Bunker, Jr, and G P Grabfield, Boston
62 *Bactericidal Action of Ethylhydrocuprein on Pneumococci H F Moore, New York
63 *Serum Ferments and Antiferment During Pneumonia J W Jobling, W Petersen and A A Eggstein, Nashville, Tenn
64 *Serum Changes Following Kaolin Injections J W Jobling, W Petersen and A A Eggstein, Nashville Tenn
65 *Effect of Protein Split Products on Serum Ferments and Antiferment J W Jobling, W Petersen and A A Eggstein, Nashville, Tenn
66 *Effect of Killed Bacteria on Serum Ferments and Antiferment. J W Jobling W Petersen and A A Eggstein, Nashville Tenn
67 Cultivation of Tubercle Bacillus Directly from Sputum by Method of Petroff R A Keilty, Philadelphia
68 *Experimental Arthritis in Rabbit Contribution to Pathogeny of Arthritis in Rheumatic Fever H K Faber, New York
69 Action of Lethal Dose of Strophanthin in Normal Animals and in Animals Infected with Pneumonia R A Jamieson, New York
70 Origin of Tumors in Mice Tumor Incidence and Tumor Age in Various Strains of Mice. A E C Lathrop and L Loeb, St Louis

58 **Types of Arsenic Kidney**—Pearce and Brown found that injection of arsenious acid into dogs produces a uniformly red kidney The type of kidney produced by injections of salvarsan, neosalvarsan and galyl falls into the general class of red kidneys, although certain differences relate them to the other main type, the pale kidney These differences consist in a relatively greater degree of tubular necrosis and in the character of the vascular injury Injection of arsacetin into dogs produces an exceedingly pale kidney The organ is enlarged soft and friable Arsenophenylglycin and atoxyl produce pale types of kidneys, but the amount and extent of vascular injury are somewhat greater than in the arsacetin kidney The cortical necrosis of the arsenophenylglycin kidney is extreme and is quite comparable to that produced by arsacetin

59 **Changes in Arsenic Kidneys**—Here Pearce and Brown show that while some arsenicals produce changes in which vascular injury predominates, others produce an equally dominant tubular injury In either of these groups the character and degree of the vascular or tubular injury produced by different compounds shows further variation, such that the lesions of different arsenicals of the same group are not identical Each compound of arsenic tested produced a lesion complex in the kidney that is relatively characteristic for that compound The mode and character of the action of arsenicals are dependent on the chemical constitution of the compound

60 **Action of Arsenicals on Suprarenals**—Toxic doses of all arsenicals produce definite pathologic changes in the suprarenals of guinea-pigs These changes include congestion hemorrhage, disturbances in the lipoid content, cellular degenerations and necroses, and reduction in the chromaffin content The character and severity of the injury produced by different arsenicals varies with the chemical constitution of the compounds From these facts, Brown and Pearce believe that suprarenal injury is an important factor in arsenical intoxication, and suggest that therapeutic doses of some arsenicals may produce suprarenal stimulation

62 **Bactericidal Action of Ethylhydrocuprein on Pneumococci**—Moore claims that the serum of rabbits which have been previously treated with a single dose of ethylhydrocuprein exerts a bactericidal action on, and, later, inhibits the growths of pneumococci in the test tube These actions are most evident in the serum of rabbits when the base (optochin base) is given in oil subcutaneously, somewhat less when the hydrochlorid of the drug is given in water subcutaneously, slight when the base is given in oil intramuscularly, and least evident, or absent, when the hydrochlorid in water is introduced directly into the stomach To get these effects by the intravenous route, toxic doses must be given and even with toxic nonfatal doses, the effects do not last

long In the case of the base given in oil subcutaneously to rabbits in a dosage of 0 1 gm per kilogram of body weight the bactericidal action of the serum is at its maximum about one hour after administration and it passes into an inhibitory effect about four hours after the drug has been given In man the same inhibitory and bactericidal actions of the serum are present when a single dose of 0 5 gm of the hydrochlorid of the drug is given by the mouth or subcutaneously but the bactericidal action is not so marked as in rabbits When the optochin concentration in the serum has apparently, diminished to a certain point in relation to the number of pneumococci present the pneumococci which have survived the bactericidal action for a few hours acquire the power of growing freely

63 **Serum Ferments and Antiferment During Pneumonia**—The authors state that the crisis in pneumonia is usually accompanied by (*a*) decrease in the serum antiferment, (*b*) the mobilization of a nonspecific protease in the serum, (*c*) an increase in serum lipase (*d*) a decrease in the noncoagulable nitrogen and of the proteoses in the serum The crisis is associated with the beginning of an active autolysis the latter depending on an altered relation between the ferment-antiferment balance The fibrin and leukocytic debris must be considered as one of the potential sources of toxic substances With rapid autolysis proceeding only nontoxic materials are absorbed

64 **Serum Changes Following Kaolin Injections**—The intoxication produced by the intravenous injection of inert substances such as kaolin the authors state is due to protein split products derived from the serum proteins The kaolin acts as an adsorbing medium for the serum antiferment, bringing about an alteration in the ferment-antiferment balance. The intoxication is accompanied by an increase in serum protease and proteoses The serum lipase the amino-acids and the total noncoagulable nitrogen show relatively little change. The antiferment shows an initial increase, followed by a loss

65 **Effect of Protein Split Products**—In dogs the toxic effect of primary proteoses is usually associated with the following serum changes (a) an increase in serum antiferment, with a following fall in titer, (b) some increase in serum protease (c) an increase in serum lipase, (d) a decrease in serum proteoses and amino nitrogen Secondary proteoses produce (a) less marked changes in the antiferment titer, (b) a marked increase in serum protease, (c) an increase in serum proteoses (d) only a slight change in serum lipase, (e) a primary decrease in amino nitrogen The peptone the authors used (prepared from dog muscle) caused (a) a change in antiferment titer similar to that produced by the primary proteoses, (b) a marked increase in serum protease (c) only a slight increase in serum lipase, (d) a primary decrease in proteoses followed by an increase later, (e) an increase in amino-acids A small dose of peptone resulted in a decrease in antiferment titer, together with a primary decrease in serum protease. The peptone preparation was nontoxic when introduced into the stomach or rectum while the intestinal injection was followed by an immediate intoxication

66 **Effect of Killed Bacteria on Serum Ferments**—The intravenous injection of killed organisms is followed by the mobilization of a nonspecific protease and lipase, the rapidity and extent of this reaction depend on the toxicity of the organism and on the resistance of the organism to proteolysis The temperature and leukocytic curve bear no relation to the ferment changes The serum antiferment is usually increased after the injection Of the organisms studied the typhoid bacillus produced the most marked ferment changes and the tubercle bacillus the least The toxicity of the dried organisms cannot depend wholly on proteolysis in vivo, but must depend in part on the preformed toxic substances liberated on lysis Serum protease should not be considered as the sole exciter of intoxication through the production of protein split products, it seem possible that its function may in part be one of detoxication.

68 **Experimental Arthritis in Rabbit.**—By a process of sensitization described, Faber was able to cause arthritis in rabbits constantly after one intravenous injection of the streptococcus This reaction is specific By intravenous inoculation without previous sensitization of the streptococcus used it was possible to cause arthritis in rabbits only after three or more injections An analogy is suggested between the arthritis induced by sensitization and the relapses in human rheumatic fever A further analogy is suggested between the development in rabbits of arthritis after repeated intravenous injections and the development of the primary lesion in human rheumatic fever

Journal-Lancet, Minneapolis

October 15 XXXV No 20 pp 555 585

71 Contributions of Twentieth Century Toward Better Understanding of Gastro Intestinal Ailments F Smithies Chicago
72 Exophthalmic Goiter Report of Case. F M Crain Redfield S D
73 Nasal Accessory Sinuses as Foci of Infection. W R Murray Minneapolis
74 Cerebrospinal Meningitis A Kuhlmann, Melrose

November 1 No 21 pp 587 617

75 Team Work J T Rogers St Paul
76 Inventory of Progress of Medical Education in America and in Minnesota. R. O Beard Minneapolis

Lancet-Clinic, Cincinnati

October 30 CXIV No 18 pp 387 406

77 Epinephrin Reaction in Gastric Crisis of Tabes and Significance of Betaiminazolyl Ethylamin in Feces B Holmes Chicago
78 Non Drug Therapy R Southworth Cincinnati
79 Diagnosis and Treatment of Gastric and Duodenal Ulcers J R Wathen Louisville Ky
80 Intestinal Prolapse and Adhesions. H W Bettmann Cincinnati

Laryngoscope, St. Louis

October XXV No 10 pp 675 758

81 Report of Collective Investigation on Curettement of Eustachian Tube in Chronic Aural Suppuration. S Yankauer New York
82 Surgical Anatomy of So Called Capsule of Faucial Tonsil G H Makuen Philadelphia
83 Some Facts Not Generally Understood About Oil Ether Colonic Anesthesia J T Gwathmey New York
84 Brain Infection of Otic Origin Report of Five Cases J W Murphy Cincinnati
85 Spindle Cell Sarcoma of Nasopharynx. H B Orton Newark N J

Medical Record, New York

November 6 LXXXVIII No 19 pp 769 814

86 Value of Scientific Doubt in Surgical Diagnosis J B Roberts Philadelphia
87 Bone Grafting and Artoroplasty G H Sexsmith Bayonne N J
88 Neglect of Injuries to Nose from Football D B Delavan New York.
89 Electromechanical Treatment of Genito-Urinary Diseases W B Snow New York.
90 Prevention of Insanity W M Kenna, Central Valley
91 Quinin after Rectal Operations. E. Bonnot, St Louis.
92 Picric Acid and Benzidin Stain Transitional Cell in General Paralysis B Lemchen Dunning Ill

New Mexico Medical Journal, Las Cruces

October XV No 1 pp 1 39

93 Protest Against Ill Advised Surgery H M Smith East Las Vegas
94 Enzymes E S Bullock Silver City
95 Nephritis of Infection M K. Wylder Albuquerque.

New Orleans Medical and Surgical Journal

November LXVIII No 5 pp 287 358

96 Bacteriology and Pathology of Blastomycotic Infections. H. W Wade New Orleans.
97 Medical Aspects of Systemic Blastomycosis G S Bel New Orleans.
98 Cutaneous Blastomycosis. H E. Menage New Orleans.
99 Surgical Aspects of Systemic Blastomycosis R. Matas New Orleans
100 Malaria and Carriers of Malarial Infection. J C. Cole, New Orleans
101 Cervical Myoma Report of Unusual Case. M. A. Shlenker New Orleans.
102 *Malignant Disease of Left Testis R Matas New Orleans.

102 **Malignant Disease of Left Testis**—The essential facts of Matas case were the following First, that a mixed tumor

of the testis developed rapidly and attained unmistakable characteristics in the course of nine months, dating from its first appearance Castration including the spermatic cord beyond the internal ring, was performed Dec 19, 1914, nine months after the first appearance of the disease July 15, or twenty-seven days after this thorough castration, Chevassu's operation for the removal of the primary lymph zone for preaortic and perirenal metastases was performed This operation demonstrated that extensive glandular metastases had already occurred All the visible glands were removed, the pathologist reporting an identical histologic structure namely, mixed tumor in the metastases as he had found in the testis The patient recovered from this extensive and serious operation May 1, or scarcely four months after this operation, it became quite evident and demonstrable that many large metastatic deposits had occurred in the posterior mediastinum, pleura and lung May 30 the patient died, in consequence of the thoracic metastases Thus death occurred about thirteen months after the first signs of the disease had appeared in the testis six months after castration, and five months after the attempt at radical extirpation or Chevassu's operation

New York Medical Journal

November 6 CII No 19 pp 929 976

103 Value of Roentgen Ray in Diagnosis of Gastro Intestinal Disturbances J Friedenwald and F H Baetzer, Baltimore
104 Chronic Intestinal Stasis A Bassler, New York
105 *Sesamoids of Flexor Brevis Hallucis Their Importance N P Barnes, Washington, D C
106 Fibroid of Ligamentum Ovarii Proprium A M Hellman, New York
107 Clinical Delimitation of Hysteria M Solomon Chicago
108 Diarrhea in Infancy C K Johnson Burlington, Vt
109 Immunization with Autogenous Proteins in Bronchial Asthma H Iskowitz New York
110 Vincent's Angina A G De Sanctis, New York

105 **Sesamoids of Foot**—The sesamoids of the metatarsophalangeal articulation Barnes says, demand attention Their constancy and prominence is shown by all the plates taken at random of males and females from 15 to 75 years of age Situated one in either head of the flexor brevis hallucis They are bound together by a strong fibrinous structure and capsular ligament forming a groove on the under surface for the passage of the tendon of the flexor longus hallucis The sesamoid bones must be present and the great metatarsophalangeal joint must be normal for its proper functioning Injuries to these bones are the result of direct violence, and the extent of injury is proportionate to the force of the violence or the length of time of its continuance Thus, a heavy weight falling on the foot, the body weight being caught with great force on the ball of the foot, as in falling from a height or slipping while carrying a weight, or the twisting or slipping of the foot off the prong of an automobile clutch or brake, may fracture one or both of these bones completely The inner bone situated directly under the head of the metatarsal is the more commonly injured

The result of a serious trauma of this sort asserts itself with corresponding pain and tenderness, increasing with use Disability, from resulting inflammation and sympathetically lame muscles, becomes complete More frequently in these days of constant dancing, hard floors and pavements, high heels and thin shoe soles, the trauma comes on gradually Short rests and cold applications at the onset give relief but on resuming the excessive glide under the hypnotic sway of the rhythmical rag and the spirit of "on with the dance let joy be unconfined," the heat and discomfort, pain and tenderness return Continuance of this indulgence produces a cellulitis, tendosynovitis, periostitis, tissue thickening and sometimes exostosis and the corresponding lame muscles from unnatural walking Trauma of the tissues thus produced naturally enforces some form of rest treatment To this rest treatment the attendant may add counterirritants, heat and pads

The plan Barnes has devised to protect these injured bones is effective. The shoes the individual has been wearing, the more worn and thin the better, are simply half soled with a good, thick leather, cutting out the inner surface completely corresponding to the position of the sesamoids New shoes have the outer sole removed corresponding to the position of the bones in question A hole an inch or a little more in diameter is cut out sharply and completely in the inner sole. If the thickness of the sole is not enough to keep the sesamoids from touching the floor, an extra sole is applied cut out in the same way No inner pads are used but the projection is permitted to make its own depression on the soft inner sole which acts as a hammock or drum head In fracture or trauma followed by exostosis open surgery is needed The former may be treated in the same manner as fracture of the patella, or the exostosis may be removed without disturbing the joint

New York State Journal of Medicine

October XV No 10 pp 373-414

111 Spinal Fluid in Syphilis S R Miller, Baltimore
112 *Organic Obstruction of Ileum as Cause of Gastric Disturbance G Chambers, Toronto, Canada
113 *Intestinal Prolapse and Adhesions H W Bettmann, Cincinnati
114 Intestinal Stasis A A Jones, Buffalo
115 Fractures in Vicinity of Joints C E Caldwell Cincinnati
116 Available Fields for Research and Prevention in Mental Deficiency M G Schlapp, New York
117 Improvements in Technic of Cesarean Section W M Brown, Rochester
118 Case of Spontaneous Rupture of Uterus R McPherson, New York
119 Case of Hydrocephalus A W Armstrong, Canandaigua

112 and 113 Abstracted in THE JOURNAL, May 22, 1915 p 1787

Philippine Journal of Science, Manila

July, X No 4 pp 249 306

120 Pathologic Anatomy of Bubonic Plague B C Crowell, Manila

Surgery, Gynecology and Obstetrics, Chicago

November XXI, No 5, pp 541 668

121 *Premature Separation of Normally Implanted Placenta J W Williams, Baltimore
122 What Has American Gynecologic Society Done for Gynecology? T J Watkins Chicago
123 *What Is Fate of Ovaries Left in Situ After Hysterectomy? H N Vineberg New York
124 *Ovarian Transplantation F H Martin Chicago
125 *Subcutaneous Transplantation of Ovarian Tissue S A Chalfant, Pittsburgh
126 *Study of Management of Placental Stage of Labor J O Polak Brooklyn
127 *Hair Balls, or Hair Casts, of Stomach and Gastro Intestinal Tract R Matas New Orleans
128 Cysts of Prostate J H Cunningham, Jr Boston
129 *Surgical Treatment of Tubercular Ureter in Female D Bissell New York
130 *Partial Occlusion in Treatment of Aneurysms E Martin, Philadelphia
131 *Perinephritic Abscesses W F Braasch Rochester, Minn
132 Obstetrics, Lost Art R W Holmes, Chicago
133 Chancre of Cervix Uteri U J Wile and F E. Senear, Ann Arbor, Mich,
134 Physiologically Active Substances Contained in Placenta and in Corpus Lutem R T Frank, New York, and J Rosenbloom Pittsburgh
135 Operative Treatment of Bad Results After Fracture J E Moore, Minneapolis
136 Construction of Artificial Vagina with Establishment of Menstrual Function W D Ward, Rochester, N Y
137 Management of Deficient Lactation N S Heaney, Chicago
138 Small Doses of Pituitary Extract in Obstetrics J L Bubis, Cleveland
139 New Tonsil Holding Forceps S C Glidden Danville

121 **Premature Separation of Placenta**—One of Williams' two patients, on whose cases this article is based, presented albuminuria and probably nephritis, while in the other the urine was normal both before and after the accident, yet both presented identical uterine lesions with striking arterial changes Williams believes that they were both due to some common cause, which he assumes to be "toxemia" in character, but distinct from the usual toxemia of pregnancy, and concerning the nature and origin of which he is ignorant The conclusions drawn from his study by Williams are 1 That premature separation of the normally implanted placenta occurs much more frequently than is generally believed and may give rise to only trifling clinical symptoms or may put the life of the patient in the greatest jeopardy 2 That in the severe cases, at least, the accident is associated

with profound disorganization of the uterine muscle by hemorrhage the so called uteroplacental apoplexy 3 That its causation is probably dependent on some as yet undifferentiated form of toxemia which may or may not be accompanied by albuminuria

The author urges that the possibility of the accident should always be considered when dealing with antepartum hemorrhage and that a tentative diagnosis should be made unless the existence of placenta praevia can positively be demonstrated Furthermore a diagnosis of concealed hemorrhage should be made whenever a patient in the later months of pregnancy complains of intense abdominal pain is pallid and presents a uterus of ligneous consistency in the absence of external bleeding and even of the clinical symptoms of shock The second important deduction is that hard and fast rules cannot be laid down for the treatment of premature separation of the placenta, but at the same time it should be regarded as axiomatic that even in slight degrees of separation the bleeding will continue until the uterus has been emptied of its contents and is able to contract down on and constrict the bleeding vessels In general the decision to interfere will depend on the amount of blood lost and the general condition of the patient If the hemorrhage is slight and is not associated with untoward symptoms, the case will usually terminate successfully by the unaided efforts of Nature, although it is understood that the patient should be watched carefully and interference resorted to on the first appearance of serious symptoms

On the other hand, if the bleeding is profuse and the condition of the patient serious prompt intervention is necessary when the choice of operation will depend on the condition of the cervix—forceps version, the introduction of Champetier de Ribes' balloon, or cesarean section being employed according to the exigencies of the case The latter operation should be chosen only when the cervix is but slightly dilated or when the general condition of the patient is more serious than can be accounted for by the amount of blood which has escaped All danger has not passed with the delivery of the child through the maternal passages whether spontaneously or artificially, as the uterus frequently fails to contract satisfactorily and death from atonic hemorrhage may result unless radical measures are taken for its relief Accordingly when such an accident supervenes time should not be wasted in employing hot intra-uterine douches ergot or pituitary extract and similar measures but the uterus should be immediately packed with gauze. If this leads to forcible contractions and completely checks the bleeding well and good but if blood-tinged serum makes its way through the pack the abdomen should be opened immediately and the uterus removed in toto or amputated supravaginally

123 and 124 Abstracted in THE JOURNAL June 12 p 2014

125 **Transplantation of Ovarian Tissue**—Ovarian tissue was transplanted by Chalfant in thirty-two patients the first one Dec 30 1912 and the last one Jan 27 1915 In every instance it seemed necessary to remove the ovaries on account of infection extensive cystic degeneration damage from extensive adhesions or impaired blood supply In practically every instance, the tissue transplanted was abnormal One patient died at the end of twenty-six hours from a peritonitis due to the bacillus aerogenes capsulatus In spite of the fact that many of the sections were taken from ovaries in intimate contact with pus-tubes in only one instance was the graft infected In no case was convalescence influenced by the graft In a few instances there was a little local tenderness for a time In 13 patients one ovary was not perfectly normal and there was a possibility that it might require removal or that the internal secretion from it might not be sufficient so that it was thought wise to conserve as much ovarian tissue as possible.

The graft was palpable in 9 of the 13 cases, the oldest one after one year In two cases the graft increased in size and was tender and painful a few days preceding menstruation Only one patient complained of flashes of heat or other nervous disturbances, and it is probable that in this case the ovary was infected and destroyed Both ovaries were removed but the uterus remains in two patients One patient operated on May 22 1914 menstruated the first time Sept 1 1914 and regularly each month including February, 1915 Since that time there has been no menstrual flow Flashes of heat were moderately severe just after leaving the hospital disappeared with the onset of menstruation and recurred again in March at the time of her expected period, but were less severe and lasted about three or four weeks The other patient has not menstruated Menopausal symptoms began three months after the operation and have been quite severe The uterus and both ovaries were taken from 17 patients Five patients give evidence of continued function of the graft Of these 17 patients one died and one had moved and cannot be located In the remaining 15 the graft was palpable in 12 not palpable in 3 It was tender in 6 but in only one was there much discomfort This patient has such an unstable nervous system that it is extremely difficult to reach a true estimate of the severity of her discomforts Distinct variation in the size of the graft was noticed by three patients Two patients 10 8 per cent had no flashes of heat or nervous disturbances, in 7 or 41 per cent the menopausal symptoms were slight in 5 or 29 4 per cent they were moderate, and in 3 or 1 77 per cent they were severe Of these 3, one is suspected of having a mild hyperthyroidism Another has this condition

126 Abstracted in THE JOURNAL June 12 p 2015

127 Abstracted in THE JOURNAL January 23 p 367

129 **Tuberculous Ureter in Female**—Bissell advocates the removal of the ureter with the kidney whenever tuberculous changes in the ureter exist the adoption of the combined transperitoneal and retroperitonel routes when the ureter and the kidney are removed at the same time, the use of the same combination of routes when as a secondary procedure the ureter with its accompanying sinus is removed

130 **Partial Occlusion in Treatment of Aneurysms**—The treatment indicated in cases of pulsating exophthalmos due to arteriovenous aneurysm according to Martin would be after preliminary tests as to the effect of compression of the carotid 1 An occlusion of the vessel by an absorbable ligature up to the point of stopping bruit and pulsation 2 Ligation of one or more dilated orbital vessels 3 Starvation diet guarding against acidosis Little fluid Bowel evacuations accomplished without straining and two weeks rest in bed made if not alluring at least bearable by the judicious use of anodynes

131 **Perinephritic Abscesses**—Of 67 patients operated on at the Mayo Clinic only 2 (3 per cent.) died as the result of operation Three other patients were reported dead at three seven and twelve months respectively after operation The subsequent course was ascertained in 51 of the remaining patients In 18 of this number the wound had healed in less than a month after operation Of the remaining patients 16 continued to drain for two months, 6 drained for three months and 3 drained as long as six months after operation The fistula persists to the present date in 4 patients, all of whom drained longer than six months In 2 of these patients an etiologic renal lesion was ascertained at the time of drainage and subsequently nephrectomy was advised In the other 2 no evidence of renal lesions was discovered on clinical examination however the more recent clinical tests were not employed One of these patients drained one and one half years ago has returned with cystoscopic evidence of an etiologic renal lesion not previously discovered

Tennessee State Medical Association Journal, Nashville

October VIII No 6 pp 251 294

140 Heart in Some Acute Infectious Diseases W H Witt Nashville
141 Gastro Enterostomy J H Maury Memphis
142 Teratology S M Miller Knoxville
143 Treatment of Tubercular Peritonitis W A Bryan Nashville
144 Contact Points of Medical Profession and Public A D Dancy Jackson
145 Value of Necropsies in Hospital and Medical Practice. H T Brooks Memphis
146 Local Anesthesia in Rectal Surgery P DeWitt Nashville.
147 Fistula in Ano D R Pickens Nashville
148 Eugenics and Marriage L A Stone Memphis

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

Archives of Radiology and Electrotherapy, London

August XX, No 3, pp 77 108

1 Roentgenologic Types of Pulmonary Tuberculosis H Walsham and W Overend
2 Localization of Projectiles by Roentgen Ray F de Courmelles.
3 Minor Points in Roentgenography N K Cherrill

September, No 4 pp 109 142

4 Roentgenotherapy, Its Scientific Basis and Its Teaching (To be continued) J Joly
5 Use of Intensifying Screens in Roentgenography L G Heilbron
6 Causation of Williams' Sign in Early Pulmonary Tuberculosis H Walsham and W Overend

October, No 5, pp 143 174

7 Gastroptosis A F Hertz
8 Roentgen Diagnosis of Fracture of Skull W H Stewart and W H Luckett
9 Roentgenotherapy, Its Scientific Basis and Its Teaching J Joly
10 Two Cases of Electric Burn Successfully Treated by Ionization A MacGregor
11 Location of Foreign Bodies E M Smiles.

British Journal of Tuberculosis, London

October, IX, No 4, pp 171 233

12 Open Air Hospitals A E Shipley
13 Subcutaneous Tuberculin Injections and Diagnosis of Pulmonary Tuberculosis E G Glover
14 *Dispensary Treatment Without Tuberculin A Sandison
15 Sanatorium Benefit for Tuberculous Subjects H A Ellis.
16 Nourishment for Tuberculous. W B Milestone.
17 Antiformin and Examination of Tuberculous Sputum W J Matthews

14 **Treatment Without Tuberculin**—Sandison claims that tuberculin should not be a necessary part of treatment at a tuberculosis dispensary, it is usually not even desirable, because 1 Its administration cannot be effectively and safely controlled through a dispensary 2 Its value is problematical, as no reliable statistics are possible under dispensary conditions, owing to the number of factors involved 3 It is not the only way by which the attendance of patients can be secured Dispensary treatment of tuberculosis must be based primarily on an intimate personal knowledge by the physician of the psychologic as well as the pathologic conditions of his patient The principles of "graduated rest and exercise" can be effectively carried out in considerable detail by dispensary patients, and produce excellent results The use of inhalants on a respirator is applicable to nearly all cases of pulmonary tuberculosis, and is a valuable adjunct to general treatment

British Medical Journal, London

October 16, II, No 2859, pp 557 592

18 Ureteral Calculus, Its Symptoms and Treatment (To be continued) D Newman
19 *Removal of Bullet from Right Ventricle of Heart Under Local Anesthesia L H C Birkbeck, G N Lorimer and H M W Gray
20 *Drainage of Gunshot Wounds C. M Page
21 Recruit's Heart. J Mackenzie
22 *Employment of Bandages for Irrigation of Wound Surfaces with Therapeutic Solutions and Draining of Wounds A E Wright.

19 **Removal of Bullet from Heart.**—The soldier whose case is reported by the authors was admitted to a general hospital, July 19, 1915, having been wounded eight days previously The bullet had passed through and killed a man in front of him The patient was knocked down, but did not lose consciousness, and had not had any discomfort other than slight pain from the wound There was a small dirty wound (one-half inch in diameter) just below and to the right of the xiphisternal junction, and also a painful swelling of the right parotid gland, which disappeared the next day The patient showed no other symptoms during the first few days He was kept in bed The heart appeared to be normal and regular The pulse varied between 80 and 90 The evening temperature rose to 100 to 101 F Roentgenoscopy showed that in the lower portion of the heart shadow was a sharply defined dark shadow moving with the heart, and also apparently laterally in relation to the heart. It was seen to lie quite definitely in the substance of the heart It had a distinct rocking movement No anteroposterior movement was visible in relation to the heart The object seemed to be in, or close to, the lowest portion of the wall of the right ventricle Its shape and size, so far as could be made out were those of a rifle bullet. Attempts to take roentgenograms were unsuccessful

As the pulse had shown some irregularity, rate 65 to 95, and the heart had occasionally dropped beats, an operation was decided on Under local anesthesia a wide horseshoe-shaped incision was made, convexity upward, extending along the sixth costal cartilage on each side and across the sternum at the level of the attachment of the fifth cartilage. The perichondrium was separated from the left sixth cartilage which was cut across at the costochondral junction and used as a lever to elevate the sternum while the triangularis sterni, pericardium, etc, were being separated off the posterior aspect of the flap A small portion of the right sixth rib was removed close to the costochondral junction The sternum, at the lower border of the fifth costal cartilages, was divided with bone forceps The soft parts were then separated from the sternum and ribs A hole about an inch long appeared in the pleura on the right side, in the track of the bullet.

The pericardium opened obliquely from the base to near the apex of the heart About a dram of slightly blood-stained fluid was noticed in the pericardial cavity The heart looked normal No wound could be seen On digital exploration the bullet was felt to be lying, apparently fixed, at the back of the heart, either in the wall or cavity of the right ventricle The point of the bullet was near the apex of the ventricle During the manipulations the heart was noticed to miss a beat occasionally—when touched at the upper and back part of the interventricular septum The right ventricle was seized with a pair of catch forceps near the apex When it was seen that this caused no disturbance a suture was passed through the muscle adjacent, and by these the heart was held forward This in no way agitated the patient On further exploration the bullet was definitely located by probing with a needle, and was thought to be fixed in the right ventricle near the posterior coronary vessels After manipulation, the bullet was felt to change position and to be free inside the ventricle It was worked away as far as possible from the coronary vessels and grasped between the thumb and finger Two stitches were inserted into the muscle wall over the bullet

The wall of the ventricle was incised for half an inch, and the bullet removed with forceps While the wall of the ventricle was still being held firmly between the finger and thumb the stitches were tied On removing the catch forceps there was brisk bleeding, which was stopped quickly by an under-running stitch The pericardial cavity was wiped free of blood clot and was filled with normal saline to expel the air, it was then sewed up The right pleural cavity was next filled with saline and the injured pleura sewed up While the wound was being closed the chest was aspirated to remove the saline. About four hours after the operation the respirations rose suddenly to forty-eight a minute, and remained at about that level till he died four days after the operation There was never any indication that the operation on the heart had interfered with its action, which, though quick (average 120 to 130), was wonderfully strong up to within a few hours of his death No dropping of beats was noticed after the operation The wounds in the heart had healed perfectly The cause of death was judged to be multiple pulmonary infarction from clots derived from the right ventricle

20 **Drainage of Gunshot Wounds**—Page uses a tube made of rubber In section it is star or pinion shaped The outside diameter should be the same as that of full-sized ordinary drainage tube. For certain cases the drain should be provided with a central lumen The tube is passed through the entire length of the wound track, the upper projecting extremity is capped by a piece of thin rubber tubing for example, a cut rubber glove finger—which extends just into the entry of the wound As a result, a series of gutters lying against the wound surface extend the length of the track When fluid is syringed into the cap, it passes down each

gutter so as to bring the solution into contact with practically the whole wound surface, at the same time clearing away from the same area all debris After lavage, the maximum capillary surface in proportion to the size of the drain is in action When this type of tube is employed for blind wounds the provision of a central lumen allows the fluid to be syringed to the bottom of the track whence it will return along the various gutters

22 **Irrigation of Wounds with Therapeutic Solutions**—Siphon drainage is the basis of the method advocated by Wright The efficacy of bandage siphons depends on the volume of fluid delivered This is determined (*a*) by the height to be climbed in the ascending limb, (*b*) by the length of and weight of water in the descending limb, and (*c*) any obstacle to delivery encountered at the distal end of the descending limb In addition to these the rate of delivery will be affected (*d*) by the nipping of the bandage when it rests on a knife edge this factor coming seriously into account in experiments with a long length descending limb heavily weighted with water Factors (*b*) and (*c*) have to be taken special note of in connection with the drainage of wounds In cases in which other conditions are the same it is always the siphon with the longer descending limb which gives the more efficient drainage Again, other conditions being the same a larger volume of water is delivered from a bandage whose end is immersed in water than from a bandage suspended in the air In case of water dripping off from a bandage into the air, consideration will show that the bandage will just before the drop falls, be overfull of water and that the inflow into it will for that moment be suspended to be accelerated as soon as the drop has fallen off As a result we have in the bandage which is dripping off into air a cyclically interrupted flow In contrast to this we have, in cases in which the descending limb of the bandage goes down into water, a continuous unobstructed delivery

The practical application of this in connection with wounds is that the siphon bandages which carry off the washings from wounds ought to pass down from the patient's beds into water in vessels placed on the floor And if any bandage happens to be too short to dip into the water the drip from it will be accelerated if it is torn into tails In cases in which only little water is flowing off through bandages draining a wound evaporation must be guarded against, for this will by diminishing the load of water, retard the outflow into the descending limb In cases in which an ampler outflow is desired, it can be obtained by packing the wound full of bandages For details of the technic of this method of drainage the original article should be consulted

Glasgow Medical Journal

October LXXXIV No 4 pp 241 319

23 *Cases Illustrating Some of Rarer Blood Diseases. J S McKendrick.
24 Hematuria Symptom D Newman.

23 **Some of the Rarer Blood Diseases**—Two cases of splenic anemia in which a splenectomy was done, followed by apparent cure are cited by McKendrick. In the first case that of a boy 15 years of age there was a diminished fragility of the red blood corpuscles, urobilin was present in the urine, but there was no bilirubin in the blood serum, there was a normal number of white blood corpuscles instead of a leukopenia The anemia was of the chlorotic type, the color index being 0 35 The patient suffered from perisplenitis and the results of anemia but otherwise he had the appearance of health There was no evidence of tuberculosis and the Wassermann test was negative There were no signs of rickets or worms There had been considerable epistaxis and hemorrhages into the skin, but no pigmentation. There was no enlargement of the lymphatic glands The liver was enlarged but there was no ascites On the day after the splenectomy the blood was examined, when there was an increase in the red and white cells, but no visible normoblasts The white cells were chiefly polymorphonuclears Eleven months after the operation the boy looked well and had no anemia from his appearance The chief point of interest in the second case that of a boy 8 years of age, was the immediate effect of splenectomy On the day after operation the red cells had increased from 2,550,000 to 4,650,000, the white cells from 7 800 to 34 800, an occasional normoblast had given place to a rush of these, averaging 1,800 per cm The increase in the white cells was due to a great preponderance of polymorphonuclears, the increase after the operation being 40 per cent Another point in the case was that the bone-marrow was tapped before the operation and found to be hyperplastic The patient made an uninterrupted recovery, and is still in the best of health

Lyon Médical, Lyons

CXXIV No 6 pp 181 216

25 Temporary Substitutes or Foreign Made Proprietaries (Comment le medecin peut il provisoirement remplacer par des produits français les produits pharmaceutiques allemands les plus importants?) B Lyonnet and R Boulud
26 Brief Inhalation of Ether Relieves Gallstone Colic. (Colique hepatique Traitement systematique par les inhalations d éther) P Aubert
27 Favorable Influence of Jaundice on Tendency to Mild Pulmonary Edema (Influence de l ictère sur l'état cardio pulmonaire.) P Aubert

No 7 pp 217 248

28 *Pulmonary Complications of Typhoid and Paratyphoid Fever C Mouriquand
29 *Compression of Vagus Nerves in the Neck Restores Man After Knock Out Blow on Solar Plexus Molle

No 9 pp 281 312

30 Impressions of a Surgeon at the Front (Sept mois de chirurgie dans un hopital du front) A Rendu. Commenced in No 7
31 *Treatment of Erysipelas with a Silver Nitrate Solution H Rondet

28 **Pulmonary Complications in Typhoid**—Mouriquand's experience with large numbers of typhoid and paratyphoid cases at Nancy suggests that much can be done to ward off bronchitis and pneumonia in such cases The main thing is to prevent contagion from case to case. In one ward five typhoid patients in adjoining beds were doing well when one after another they developed pneumonia and three died The epidemic of pulmonary complications died out at once as soon as each typhoid patient showing such symptoms was isolated One patient developed a pure streptococcus purulent pleurisy and five days later the neighboring patient developed the same Crowding a ward is particularly dangerous in case of contagious diseases of any kind When the space between beds can be increased, the danger of pulmonary complications grows constantly less The more serious cases should be separated as widely as possible, and if any septic complication develops strict isolation should be enforced and the bed and bedding disinfected with special care.

29 **Treatment of Knock-Out Blow**—Molle has been making a special study of the therapeutic effects that can be realized by compression of the nerves and vessels in the neck. A recent thesis on the subject was published by one of his students this year He here reports the surprising success of the measure in a young man who had received a blow in the epigastrium from the butt of a gun and dropped unconscious at once Molle reached him in half an hour and found him still absolutely unconscious and racked by efforts to vomit, pulse 140 but there was no hematemesis and but little muscular defense. Molle pressed on the nerves and vessels at each side of the neck, applying the thumb pressure again and again, briefly, repeatedly and forcibly, hoping to act thus on the nerves rather than on the vessels in the neck. The latter are affected more by slow, progressive and prolonged pressure. Five or six seconds after he had begun this staccato pressure, just inside the inner margin of the sternocleidomastoid muscle the young man opened his eyes sat up and looking in surprise at the group around him asked what had happened In an hour he felt quite himself but had some nausea and no appetite for the following three days

31 **Silver Nitrate Solution in Treatment of Erysipelas**—Rondet calls attention to his successful use for thirty years of a 1 40 solution of silver nitrate applied to the erysipelatous area every three hours, day and night, for seven days at least never more than nine days The skin is first cleansed with hot soapy water The beneficial action is so pronounced in twelve or twenty-four hours that one is tempted to sus-

pend the treatment But any cessation of the applications is followed by exacerbation of the erysipelas, to avoid surprises of this kind the treatment must be kept up systematically for the nine days This is the regular duration of erysipelas he remarks, even the recurrences run a nine-day course The fluid should be swabbed all over the area and for two fingerbreadths beyond He remarks in conclusion that naturally, the benefit is most marked *the earlier the* treatment is begun

Paris Médical

V, No 6 pp 109 124

32 The Work of the Field Hospital (L'ambulance chirurgicale immobilisee pres du front) A Latarjet.
33 Board Method of Immobilization for Compound Fracture of the Femur L Duvernay

Nos 7 8, pp 125 164 Electrotherapy Number

34 What One Must Know About Electrotherapy to Apply It to the Wounded (Ce que l'on ne doit pas ignorer en electrotherapie de guerre) A Weil
35 Direct Electric Tests During Operations on Wounded Nerves A Léri
36 Neuritis After Wounds and the Therapeutic Physical Measures. Delherm and Dausset
37 Electrodiagnosis and Treatment of Wounded Nerves. J Larat and P Lehmann
38 Improvised Electrotherapeutic Appliances (Installation economique d'electrotherapie avec des moyens de fortune) P Bonvoisin and L Palfray
39 Localization and Extraction of Projectiles by Aid of Electricity A Weil

Presse Médicale, Paris

October 7, XXIII, No 47, pp 385 392

40 *Treatment of Suppurating Gunshot and Shell Wounds of the Knee (Traitement des arthrites suppurees du genou par plaies de guerre) L Berard and Barjavel
41 Induced Formication as a Sign of Lesions of Peripheral Nerves (Le signe du fourmillement) J Tinel
42 Simplified Technic for Circular Amputation H Chaput
43 Simple Apparatus for Continuous Aspiration of Wounds with or Without Continuous or Intermittent Irrigation Saissi

40 **Wounds of the Knee Joint.**—Berard and Barjavel emphasize that a bullet or fragment of shell wounding the knee almost always causes more destruction than is apparent from the outside Armed expectant treatment is justified even when the indispensable radiography shows a bullet still in the tissues They saw four cases of this kind, the projectile still in the synovialis after two or three weeks, and perfectly tolerated In five cases they succeeded in saving the functioning of the knee by Carrel's method of aspirating the secretions In three others it failed and secondary amputation became necessary They review the technic for arthrotomy and resection, emphasizing in conclusion the necessity for close and continued supervision of the case by the same surgeon from the earliest possible moment He is thus able to guide the treatment according to indications as they arise day by day

Berliner klinische Wochenschrift

October 4 LII, No 40, pp 1033 1056

44 *Substitutes for Glycerin (Kriegsaphorismen eines Dermatologen XIX Glycerinersatz) P G Unna Concluded in No 41
45 *Treatment of Congenital Syphilis E Müller
46 *Influence of Muscular Work on Sugar Content of the Blood (Einfluss der Muskelarbeit auf den Blutzucker) W von Moraczewski
47 *Technic That Shows Membrane Like Formation in Human Tissues (Darstellung membranartiger Bildungen im menschlichen Gewebe) K Herxheimer
48 *Radiotherapy of Cancer of the Mouth (15 Falle von Mundhöhlenkrebs mit Radium gunstig behandelt) A Sticker
49 Unknown Factors in Transmission of Typhus (Auftreten von Flecktyphusepidemien in Truppen und Gefangenenlagern) F Wolter

October 11, No 41, pp 1057 1080

50 *Obscurities and Defects in Present Methods of Treating Syphilis Suggestions for Improvement C Bruhns
51 *"Aplastic Anemia" Developing from Benzol or Roentgen Exposures (Aleukia haemorrhagica) E Frank
52 Treatment of Whooping Cough Should be Addressed to the Nervous System (Ueber den Keuchhusten) V Lange.

44 **Substitutes for Glycerin**—Unna remarks that the demand for glycerin during the war, for production of nitroglycerin, threatens to deplete the small stocks of glycerin still left in the pharmacies Consequently it is well to be on the lookout for effectual substitutes Aside from its value as a lubricant and its keeping properties, glycerin is prized mainly for its power to attract water Merely as a lubricant, it is easy to find good substitutes for it among hydrocarbons of all kinds There are also two cheap and abundant substances which can take its place as far as its water-attracting power is concerned These two substances are syrup (from sugar) and calcium chlorid Sugar, we know, attracts water, it increases the amount of saliva in the mouth, and this assuages thirst (sweetened water), keeps the dry mucosa in the upper air passages moist, and, in rectal enemas, induces defecation with an overdry rectum Sugar has, besides in contrast to glycerin, a reducing power which we utilize when we use syrup as a vehicle for readily oxidized drugs (such as ferrous iodid), or when we strew sugar on aphthous ulcerations or caro luxurians Equally familiar, but less heeded is the water-attracting power of calcium chlorid Not only in solution but also in the form of a salve it exerts this healing influence on callous and pruriginous eczema By introducing a deposit of calcium chlorid into the skin the layers below and above it soften up under the influence of the water attracted by the calcium chlorid Rademacher has recommended a 4 per cent solution of calcium chlorid for softening furuncles Both the chlorid and the syrup have the further advantage that, as they liquefy, they bind considerable water and thus have a cooling action For a field of furuncles, to take the place of the excellent combination of 60 parts kaolin, 30 parts glycerin and 10 parts ichthyol Unna recommends as a substitute formula a mixture of 40 parts kaolin, 30 parts syrup, 10 parts ichthyol and 20 parts aqueous solution of calcium chlorid (1 2)

45 **Treatment of Congenital Syphilis**—Muller advocates *intensive courses of treatment in a special department in general hospitals rather than separate institutions for syphilitic children* He has been applying treatment more energetically of late under the influence of the new regime in regard to syphilis in adults *For infants he prefers intramuscular injection of a suspension of calomel in olive oil,* and gives no mercury by the mouth or inhalation, but alternates with neosalvarsan For children over 2, he gives inunctions alternating with neosalvarsan injections Some of the infants treated as above died suddenly, as in collapse Probably the system was overwhelmed too suddenly with the toxins liberated by the destruction of such quantities of spirochetes Since these experiences he has reduced the dosage somewhat for infants Once past this first course of treatment, however, the children thrive well under the succeeding courses

He has been impressed with the improvement in intelligence of many of the children during the courses of treatment Among the cases related is that of a bright child with adenoid vegetations As they were excised their extraordinary hardness was noted, and the diagnosis wavered between syphilis and sarcoma The child seemed healthy and bright, and there was nothing to suggest syphilis but the Wassermann test gave a pronounced reaction The aim should be with congenital syphilis to eradicate it entirely Hence efforts are justified to make the first course of treatment thorough and decisive The Wassermann reaction is his guide This test is applied before each course of treatment and again eight or ten days after its close After the Wassermann has become negative, two courses are given in prophylaxis If the reaction is positive, treatment is continued until the desired aim is reached In the most favorable case, therefore, three courses are required and otherwise four or five

46 **Influence of Muscular Work on the Sugar Content of the Blood**—Moraczewski noticed that in persons inclined to glucosuria the sugar content of the blood displayed a tendency to increase under conditions in which there was no increase in the healthy This occurred even on a fat diet This fact enables detection of a latent tendency to glycemia, after a given exercise the sugar content in the blood rises when it remains stationary in the healthy The findings in some healthy and diabetic persons are tabulated for comparison After ingestion, fasting, of 200 gm sugar, the

healthy assimilated it completely while the diabetic showed an increased proportion of sugar in the blood This alimentary glycemia is due to defective utilization of the sugar that is to defective synthesis of glycogen while exercise glycemia is due to absorption of sugar from its deposits whether in muscle or elsewhere The diabetic mobilizes his sugar reserves more promptly and completely than the healthy Normally in repose the sugar content of the blood declines and it rises during and after exercise Exercise also increases the output of uric acid in the urine it parallels the blood sugar content, increasing under exercise and declining during repose regardless of the amount of urine voided Even when sweating freely the output of urine much reduced the uric acid in the urine corresponded to the sugar content of the blood both increasing during exercise, and declining in repose, in the healthy

After vigorous exercise, ingestion of 200 gm of sugar to test the tolerance induces no increase in the sugar content of the urine and very little if any in the blood During repose on the other hand it is much easier to induce glycemia and glucosuria Hence exercise glycemia' cannot be compared with alimentary glycemia as the latter leads to glucosuria while the former augments the tolerance and counteracts glucosuria Diabetics excrete less sugar in the urine during fever and eliminate more during repose than when exercising Exercise glycemia is thus associated with absorption of sugar and increased power of oxidation The above facts may have to be considered in treatment of diabetes if confirmed by others

47 **Membrane-Like Contours to Human Tissues**—Herxheimer has found that staining organs with azure-eosin and decoloring with a tanning technic shows up a specific membrane-like contour of the connective-tissue fibers etc This technic shows up further delicate fibers on the sebaceous and sweat glands intima of the blood vessels, etc

48 **Cancer of the Mouth and Radium Treatment.**—Sticker reports fifteen cases in most of which malignant disease of the mouth retrogressed under radium treatment without scars or mutilation The list includes some cases of recurrence after operations He declares further that radiotherapy is preferable to surgical treatment in many cases for technical reasons and also from the standpoint of immunity This statement is based on experimental research which demonstrated that it is possible to induce an implantation tumor on laboratory animals in various different organs and points inoculated all at the same time but that after having been once successfully inoculated, it is impossible to induce further growths by later implantation of tumor cells at any point After complete excision of the implantation tumor however a new implant takes' at any and every point inoculated all at the same time On the other hand. if the implantation tumor was only partly excised and it continued to grow subsequent implantations gave constantly negative results These experimental data correspond to what is observed in the clinic during the period preceding metastasis The cancer long remains solitary and, especially with cancer in mucous membranes notwithstanding the constant opportunities for implantation of tumor cells farther along the mucosa beyond is generally free from metastases even with extensive ulceration After vaginal hysterectomy for cancer of the uterus he continues recurrence in the vagina is not uncommon while metastases in the vagina, with the uterine cancer still present, are extremely rare.

These and similar data cited are alleged to explain why radiotherapy is more promising in certain cases than surgical removal of the focus Under the radiotherapy the cancer cells being gradually destroyed and passing into the circulation cause a lively production of antibodies and these protecting substances combat the growth of any new cancer cells The antibodies thus generated are similar in nature to the autolysates of cancer cells which some are using now in treatment of cancer None of the experiences in this line reported to date. however make the distinction which he emphasizes between the periods before and during metastasis The nonheeding of this fundamental distinction readily explains the unsatisfactory results to date. It is by no means immaterial whether the tumor autolysates are taken from the body while it is still engaged in producing antibodies, that is during the premetastasis stage, or whether the material is not taken until after the body has lost its capacity for antibody production

He describes his fifteen cases in detail, in three the cancer was on the tongue and the radium induced a clinical cure In one case. only seven twelve-hour exposures, all at night, accomplished the purpose, the cancerous crater healing completely in a few weeks In seven cases the cancer was in the lower jaw and in five others in the upper jaw The radium was fastened in a plate made to fit over the upper or lower teeth One patient wore this for thirty nights' exposures and it did not interfere with his sleep In two other cases the cancer was a recurrence after one or several operations By modifying the tooth-plate-holder it was possible to apply the rays in various directions thus facilitating the cure

50 **Defects in Present Methods of Treating Syphilis**—Bruhns insists that actual progress in the treatment of syphilis will have to be based on prolonged supervision of cases carried on and recorded systematically This is scarcely possible except with private patients, and with repeated collective inquiries He presents evidence to sustain his contention that medical supervision is required for many more years than is now considered necessary An isolated negative Wassermann is no criterion that the disease is extinct Only when the clinical and serologic findings are constantly negative on repeated examinations for many years can we regard the cure as probable He lists the outcome of the Wassermann test repeated about yearly from 1908 to date in 100 private patients infected with syphilis ten or more years ago In forty-two the test was constantly negative in 32, positive at first but negative later, in seven, constantly positive notwithstanding repeated courses of treatment, in three positive at first, then long negative, but finally veering to positive again, in eight, negative at first, then positive and finally negative, and in eight, negative at first but finally positive The last three groups are particularly suggestive in some the long negative reaction for five or six years suddenly veered to a pronounced positive reaction without any clinical manifestations becoming evident at the time or later After renewed courses of treatment in the two following years the response became negative again Among the cases with constantly negative reaction were some in which brain trouble or tabes developed, demonstrating anew that the clinical manifestations and the serologic findings do not always run parallel

We appreciate better now the dire consequences of syphilis, insurance statistics have shown that 15 or 25 per cent die from the results and that from 6 to 10 per cent develop disease of the central nervous system while even more suffer from arterial disease Lenz estimates that 25 per cent of all syphilitics have aortitis Paralysis develops on the average ten or fifteen years after infection and manifest aorta trouble, eighteen or twenty years By treatment in time gummatous lesions retrogress, and hence specific treatment repeated often enough may ward off arterial and cerebral trouble later Syphilitics should have impressed on them the necessity for keeping under medical supervision Some central system might be devised to remind all syphilitics at regular intervals of the necessity for returning to be examined

Some recent research has demonstrated that in from 60 to 75 per cent. of all the cases of tabes or paresis other members of the family had been infected This proportion is far larger than is found in the families of syphilitics who do not develop tabes or paresis These and other facts seem to indicate that the form of syphilis which develops tabes and paresis later is infectious over a longer period than is the case with syphilis under other conditions Raven reported last year investigation of ninety families in which a case of metalues had developed. The interval between date of infection and the marriage was known in about half of them and it had been four years in two families five years in one and from six to twenty-one years in ten It seems as if in syphilogenous nervous affections the individuals are liable to infect others over a longer period than other syphilitics If further research confirms this, we will have to modify our views as to when we can consent to marriage, for we have no means of knowing which of our syphilitic patients are going to develop nervous or brain affections Only by prolonged supervision over individual cases and correlation of uniformly classified data can we hope for light on the various phases of the syphilis question

51 **Hemorrhagic Aleukia**—The first installment of Frank's article on the so-called "aplastic anemia" was summarized in these columns October 30, p 1590 He refers to Selling's 'model report" of a case of fatal industrial poisoning from inhaling the fumes of benzol In this and in two similar cases, the red blood cells were comparatively little affected, the white cells bore the brunt of the attack The result is a leuko-anemia, not an erythro-anemia, and myelophthisis is the source of the trouble Frank reports a case of myeloid leukemia in a woman of 39 given a brief and mild course of Roentgen treatment under which the blood count returned practically to normal The changes thus started in the blood kept on, however, until the count reached the absolute opposite of what it had been, the leukemia being superseded by aleukia Decastello has recently reported a similar case In both, the complete transformation occurred under Roentgen exposures of the spleen This suggests that the spleen may have a special function in some circumstances, manifested by an inhibiting and impairing of the functioning of the bone marrow This special function seems to be set in action by the influence of Roentgen exposures, and also by the influence of certain morbid processes in the spleen itself Frank declares that this syndrome of morbid conditions in the spleen accompanied by subnormal numbers of leukocytes and blood platelets, brings us to the cause of toxin production in hemorrhagic aleukia Too long it has been mistakenly included in the group of aplastic anemias"

Deutsche medizinische Wochenschrift, Berlin

October 7, XLI, No 41, pp 1205 1236

53 *Medicomechanical Treatment. G Ledderhose
54 The Vitamins in the Diet (Ueber Vitamine und akzessorische Nährstoffe) H Boruttau
55 *Concordance Between Urochromogen and Diazo Tests in Typhoid and Typhus. M Levy
56 Selenium Compounds in Treatment of Cancers. (Zur Therapie maligner Tumoren der Tiere und des Menschen mit Selenverbindungen) H Coenen and W Schulemann
57 The Lime Content of Bile and Its Import in Production of Gall stones (Der Kalkgehalt der Galle) L Lichtwitz and F Bock
58 Nystagmus After Injury of Foot of Second Frontal Convolution, Nine Cases. Noehte.
59 Gunshot and Shell Wounds of the Jaws and Their Treatment. (Die Kieferverletzungen im Kriege) A Stein
60 Technic for Making Plaster Casts in Field Hospital S Peltesohn

53 **Medicomechanical Treatment.**—Ledderhose discusses the indications and technic for application of medical-mechanical treatment, especially for men recovering from gunshot and shell wounds He emphasizes, however, that improvised apparatus generally answer as well as more complicated and expensive contrivances With them all, careful supervision is necessary to prevent harm from misdirected or excessive exercises The main features in the whole system of medicomechanical treatment are the physician's influence on the patient's mind and spirits, and the benefit from the skilful application of water, steam and superheated air, massage and electricity

55 **The Urochromogen Reaction in Diagnosis of Typhoid**—Levy applied the diazo and Weiss' and Rhein's potassium permanganate test for urochromogen in the urine in 122 cases of typhoid and the Weiss and diazo tests in twenty-four of typhus The findings were so concordant with the various tests that it is evident the simple urochromogen test can take the place of the diazo when desired The discrepancies were found so slight and so few that they are practically negligible The urochromogen test was especially pronounced in all the cases of typhus giving a diazo reaction, both tests were negative in three of the twenty-four cases (The Weiss technic was described in The Journal, June 13, 1914, p 1886)

Medizinische Klinik, Berlin

October 3, XI, No 40, pp 1093 1118

61 *Clinical Manifestations, Genesis and Etiology of Purulent Meningitis During War Time A Ghon and B Roman
62 Present Status of Psoriasis and Allied Affections J Jadassohn Commenced in No 39
63 *Gas Gangrene and Gaseous Phlegmons. W Pfanner
64 *Arrest of Hemorrhage with Muscle Tissue (Blutstillung durch thrombokinetische Muskelwirkung) R Pamperl
65 Experiences in a Field Hospital (Erfahrungen allgemeiner Art aus einem Feldlazarett des westlichen Kriegsschauplatzes.) W Wolf
66 Suture of the Heart Six Hours After a 3 cm Stab Wound, Too Late for Heart to Rally J Frist

61 **Purulent Meningitis**—Ghon and Roman state that purulent meningitis with an exanthem, true Weichselbaum meningitis, has been observed at numerous points in Germany Austria and Hungary since the war began, while before it was rare They examined five such cases postmortem, two in adults The meningitis that develops after a gunshot or shell wound of the head always proved a mixed infection in the sixteen cases they had occasion to examine postmortem In two cases the proteus and the gas gangrene bacillus were involved

63 **Gas Gangrene and Gas Phlegmon**—Pfanner insists that true gas gangrene requires the most vigorous treatment, early amputation, or the patient is doomed On the other hand, phlegmons with gas production are usually mild processes that heal under simple conservative measures This distinction has not been made clearly by writers on the subject, and those who have reported "recovery from gas gangrene under conservative measures," merely mistook a phlegmon with gas for the true gas gangrene Differentiation is often difficult, but one sign he has never known to fail This is a suddenly developing intense pain in the limb below the wound, at a time when there is little or no production of gas and no signs to warn of the impending catastrophe The pain is so intense that the patient clamors for the doctor Testing the sensibility during this attack of pain shows paresthesias The pain keeps up agonizing for an hour or two, and then stops abruptly The limb in this area is then found completely anesthetic, pale, cold and dead While these changes are occurring below, the discoloration of the skin and the emphysema spread and involve extensive regions

Pfanner had studied these phenomena in three cases of true gas gangrene before the war and saved the patients by prompt amputation Armed with this experience, he was able to differentiate true gas gangrene in the early stages in wounded soldiers and bring them through by immediate amputation On the other hand, he was able to save the limbs of others who had phlegmons with gas, simulating true gas gangrene, but terminating favorably under conservative measures

64 **Arrest of Hemorrhage with a Scrap of Muscle**—Pamperl relates remarkable success in promptly arresting hemorrhage by pressing on the bleeding spot a piece of muscle tissue, taken from the vicinity, crushed a little first, in a clamp, to make it stick better and bring the blood platelets more to the surface The scrap need be only from 1 to 3 mm thick, it sticks of itself after it has been pressed on the bleeding spot for a few seconds to two minutes He avoids having any fascia tissue on the side turned to the bleeding spot The history of means to arrest hemorrhage is reviewed and this muscle method is ascribed to Horsley who found it effectual on animals, hemorrhage from arteries and veins being arrested by the application of the scrap of muscle when the blood pressure did not exceed 60 or 80 mm mercury Horsley is said never to have published his experiences Pamperl found it always effectual in his sixteen cases, including a number of operations on the brain

Munchener medizinische Wochenschrift, Munich

October 5, LXII, No 40, pp 1345 1380

67 Number and Shape of Leukocytes in Typhus (Zahl und Formen der weissen Blutkörper beim Fleckfieber) M Matthes
68 Relapsing Diseases and Their Treatment with Salvarsan (Rekurrenserkrankungen und ihre Behandlung mit Salvarsan) F Reiche

69 Modified Technic for Electrocardiography (Modifikation in der Aufnahme der Elektrokardiogramme von pathologischen Herzen zur Erleichterung der klinischen Diagnose) Jaworski
70 *Boeck's Sarcoid with Participation of Internal Organs. E Kuznitzky and A Bittorf
71 *Steam Sterilization Practicable for Large Rooms (Dampdesinfektion grosser Raume.) C Seiffert
72 *Artificial Pneumothorax Under Adverse Conditions J Gwerder
73 Technic for Determination of Protective Ferments in Tuberculous Spinal Fluid (Untersuchung tuberkulos meningitischer Punktionsflussigkeiten mit Hilfe der Ninhydrinreaktion) V Kafka
74 Case for Office Wassermann Test. (Neues Besteck zur Ausfuhrung der Wassermannreaktion im Sprechzimmer des Arztes) R Weiss.
75 Warning Against Training Blinded Soldiers to be Masseurs (Die Blindenmassage) F Kirchberg
76 Accidental Heart Murmurs in Soldiers (Zur Kenntnis der akzidentellen Herzgerausche bei Kriegsteilnehmern) H Ehret
77 Differential Diagnosis of Relapsing Fever (Ruckfallfieber) R Cayet.
78 Afebrile Typhoid (Fieberloser Typhus) F Meyer
79 Immobilization of Fractured Femur Leaving the Knee Movable (Oberschenkelschussfrakturen) H v Baeyer
80 Treatment of Severe Fractures and of Joint Injuries in Field Hospital A Heddaeus
81 Diagnosis and Treatment of Wounds of Skull and Brain (Schadel und Gehirnschusse Unterscheidung der Tangentialschusse) P Sick
82 Arc Light Exposures and Galvanic Foot Baths Promptly Relieve Pain in Feet after Freezing (Schnelle Heilung schwerer Hyperasthesie an erfrorenen Fussen) K Hasebroek
83 Efficacy of Charcoal in Treatment of Gastro Intestinal Catarrhal Troubles. (Ueber Tierkohlebehandlung bei Truppen in der Front) G Kelemen

70 **Boeck's Sarcoid**—This affection has hitherto been classed with the skin diseases, but a case is here reported in a man of 27 in which the lungs spleen liver lymph glands and kidneys were also involved Kuznitzky knows of only one case on record (Terebinsky) of Boeck's sarcoid with enlargement of the spleen The nodules on the upper arm were small and exclusively in the subcutis, rolling under the finger and no connection with the tissues above could be detected even with the microscope The nodules were scattered over the limbs and the face was spared, contrary to the usual mode of distribution Kuznitzky thinks that there is much to sustain the assumption that the disease is a general one at first, and that the skin is affected secondarily, the skin lesions developing symmetrically, without much difference in size Seven other cases of Boeck's sarcoid were then examined more closely for internal manifestations, and the same lesions were evident in the lungs in all, roentgenoscopy revealing the peculiar marbling effect while the spleen was enlarged in four, and three presented the same characteristic catarrhal aspect in the mucosa of the nose, epiglottis, pharynx and larynx He emphasizes that none of them reacted positively to tuberculin tests, even carried to the extreme limit The Roentgen pictures of the case described in detail show the pathologic infiltrations in the lungs, amply explaining the symptoms, and show the improvement parallel to the improvement noted in the nodules of the skin

The young man had been supposedly healthy except for measles in childhood and gonorrhea at 21 Symptoms of difficulty in breathing and in the heart action after exertion developed about eighteen months ago and nephritis was diagnosed after a few months Then came gastric catarrh, vomiting, diarrhea and extreme weakness Red spots appeared on the legs with the earliest symptoms and have persisted unmodified to date The leukocytes numbered 5 600, hemoglobin 87 per cent After a two months' course of arsenic the hemoglobin percentage was 92 the red count 5 100 000 but the whites were still only 5 100 The arsenic was not borne well and a febrile herpes zoster developed with severe neuralgia but the general condition improved and the man gained nearly seven pounds in weight. He had lost 34 pounds during the preceding year

71 **Steam Sterilization of Large Rooms**—Seiffert experimented with double-walled wooden barracks, turning the steam from two traction engines (*Lokomobilen*) into a room of 1,000 cubic meters air space The sterilization was satisfactory in four hours It became complete when formaldehyd was used with it all pathogenic germs and vermin being promptly destroyed

72 **Artificial Pneumothorax Under Adverse Conditions**—The adhesions etc, apparently rendered pneumothorax impracticable in the case described but as a last resort Gwerder injected the nitrogen in the desperate hope that it might help somehow To his surprise it remained localized directly over the cavity and compressed it in the most ideal manner thus inducing the collapse of the lung exactly where it was needed and nowhere else, and the patient began to improve at once

Therapie der Gegenwart, Berlin

October LVI No 10 pp 361 400

84 Chronic Septic Conditions in Tonsils Teeth Jaws and Nasal Sinuses from Standpoint of Military Efficiency and Pensions (Die chronischen Infektionen im Bereiche der Mundhöhle und der Krieg) H Passler Concluded in No 11
85 *Advantages of Isotonic Sugar Infusions in Cholera and other Acute Diseases Impairing the Kidneys H Strauss
86 *Systematic Exercises in Treatment of Tabes. (Alte und neue Uebungsbehandlung der Tabes) L Jacobsohn
87 Subjective Factors Regulating What and How Much We Eat. (Das Nahrungsbedurfnis) W Sternberg

85 **Sugar Instead of Saline Infusions**—Strauss warns that salt is directly injurious to the abnormally sensitive epithelium in the kidney He has long preached that when there is reason to suspect that the kidneys are below par, when infusion is indicated an isotonic sugar solution should be used instead of the ordinary saline He now urges this as the routine procedure in cholera as in this disease the epithelium apparatus of the kidneys is almost invariably seriously impaired The lesions in cholera resemble those with mercuric chlorid poisoning Rumpf has stated that in his 3 000 cases of cholera anuria was the rule in all but 698, and that 57.3 per cent of the cases with complete anuria terminated fatally Saline infusion tends to aggravate the kidney lesions while a 4 5 per cent solution of grape sugar answers the therapeutic purpose without damaging the kidneys and at the same time supplies in the most harmless way a certain amount of nourishment, 2 liters of the 4 5 per cent solution represent 360 calories It is possible that infusion of sugar solution will prove to have superior advantages over salt solution in other severe infections and intoxications with damaged kidneys

86 **Exercise Treatment of Tabes**—Jacobsohn emphasizes that no specialist skill is required to train tabetics to overcome their ataxia Any physician can do it, and the mechanical aids can be improvised or dispensed with entirely in the mild cases As the tabetic does not feel fatigue readily, he must be watched to stop short of fatigue as this would weaken the muscles The exercises benefit even in the severest cases as a rule, and decided improvement can be counted on in 50 per cent of all cases The exercises can be done in bed or on the sofa at first Five to fifteen minutes is usually long enough for the sitting but it should be repeated two or three times a day It may be necessary to support the limb at first or suspend it in a sling to permit the patient to make the volitional movements A straight zigzag or spiral chalk mark on the floor to follow, or a book or cigar box to step over may prove useful exercises The aim should be to train the patient in the movements needed in daily life, walking, climbing stairs knocking writing and buttoning garments A typical feature of the third stage of tabes is the inability to extend the leg at the knee The knees thus give way when the tabetic tries to stand up The patient strives to compensate this by innervation of the extensors of the knee and this generally results in an overcorrection The knee is extended too far and held in this overtension The same occurs with the hip joint, shoulder and elbow The tendency is to overcorrection

By thus analyzing the elements of the movements we can see the way in which they share in the general disturbance and the patient can thus be shown and taught how to correct it by voluntary innervation and utilization of the remnants of sensibility The volitional muscular correction is very apt to be excessive, and this in turn requires compensation Foerster has made a special study of this analytic method and Jacobsohn endorses this method as great progress H-emphasizes, however, that the psychic element in the ataxia must not be overlooked Some patients have been frightened by what they hear and read about tabes, others have had a fall or other accident Cautious suggestion renders good service in such cases

Wiener klinische Wochenschrift, Vienna

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No 34, pp 909 936

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Gazzetta degli Ospedali e delle Cliniche, Milan

October 13 XXXVI No 70, pp 1089 1104

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110 *Hemiplegia from Spontaneous Hematomyelia (Ematomielia spontanea in amenorroica) G Jona

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112 **Pulmonary Syphilis**—Lindvall had opportunity in 1913 to watch the clinical course and examine postmortem two cases of syphilitic processes in the lungs He recently encountered a third case, and was able to arrest the progress of the affection with specific treatment The patient was a woman of 33, previously healthy, with no known venereal disease Early in 1913 she developed sciatica and began to feel weak and in two months to cough incessantly There was but little expectoration and the sputum never was hemorrhagic The symptoms indicating a lesion in the lung developed very gradually and nothing could be found to explain it except possibly syphilis It seemed to be restricted to the central part of the right lung, there was evidently destruction of lung tissue with formation of a cavity but no tubercle bacilli could be detected in the sputum and inoculation of guinea-pigs was also negative The most convincing proof of the syphilitic nature of the process was the brilliant success of specific treatment aided by artificial pneumothorax

per cent of the total Of the 606 cases, cavities were present in 378, or 62 per cent The presence of tuberculous complications is given in 489 cases, or 43 per cent of the total The number of tuberculous complications was 112, or 23 per cent of the 489 cases in which complications were recorded Of the 112 complications, sixty-eight involved the larynx, twenty-three the bowel, and fifteen were either empyemas or pleural effusions

It is apparent from the large proportion of far-advanced cases, 88 7 per cent (with bilateral involvement present in 77 per cent, cavities in 62 per cent, and serious tuberculous complications in 23 per cent), that artificial pneumothorax is being tried at present in this country chiefly in very advanced cases unimprovable under ordinary sanatorium regimen This must be taken into consideration in judging the "immediate" and "subsequent" results obtained in 1,145 cases analyzed in this paper

The degree of compression obtained in individual cases as judged by physical signs and subsidence of constitutional disturbance (in some by Roentgen-ray plate and fluoroscope), is given in 757 cases, or 66 per cent. of the total number reported Of this number satisfactory compression was obtained in 390 cases, or 51 5 per cent , partial, in 205, or 27 per cent., failure, in 162, or 21 5 per cent

IMMEDIATE RESULTS

The results of treatment, as given in 1,108 cases (out of 1,145), can be designated as in Table 2

TABLE 2.—SUMMARY OF RESULTS OF TREATMENT IN 1 108 CASES REPORTED BY TWENTY FOUR AMERICAN OBSERVERS

	No	Per cent.			No	Per cent.	
Failure (failure 152 very small amounts 10)	162	14 6	49 1%	Improved	323	29 2	21 7%
Unimproved	203	18 3		Quiescent	119	10 8	
Dead	180	16 2		App arrested (or arrested)	105	9 5	
				Cured	16	1 4	

Sixty-nine, or 6 2 per cent , were working

As in over 90 per cent of these cases the result was recorded either during the course of treatment or a few months after its discontinuance, and in only 10 per cent from a few months to three years after discontinuance, the results should be designated as "immediate "

The method was unproductive of *any* beneficial effect in almost half of the cases (failures, unimprovements and deaths amounting to 49 1 per cent), 29 2 per cent were "improved," the improvement being, probably, of limited duration in the majority of these cases, 21 7 per cent is the total of the "quiescent," "arrested" and "cured" cases

Thus the *immediate* beneficial result of artificial pneumothorax treatment of these 1,108 cases was mostly palliative in 29 2 per cent and *apparently* durable in 21 7 per cent

A comparison of the results obtained by the American observers with the results recorded in 224 cases by Brauer, Spengler and Zink,[28] after a period of observation extending from six months to five years, is given in Table 3

The total percentage of failures, unimprovements and deaths in the American cases was 49 1, as compared with 42 9 in the cases reported by Brauer, Spengler and Zink It is apparent that with the class of cases selected at present for artificial pneumothorax, the method is either inapplicable or is unproductive of *any* beneficial effect in almost half of the cases

Most of the "improvements" (American 29 2 per cent , Brauer, Spengler and Zink, 31 2 per cent) can be classed under the head of "palliative effect "

The group of "quiescent" cases (American 10 8 per cent., Brauer, Spengler and Zink, 9 8 per cent) includes, in all probability, a proportion of "durable results," a term which can be unequivocally applied only to almost all the "arrested" or "cured" cases (American 10 9 per cent , Brauer, Spengler and Zink, 16 1 per cent)

SUBSEQUENT COURSE OF ARTIFICIAL PNEUMOTHORAX CASES

The efficacy of artificial pneumothorax treatment can be judged only by the subsequent course, through a long period of years, of a large number of cases In studying the American literature and some of the European, I was unable to gather any voluminous data bearing on this important question Some figures of interest are given in Tables 4 and 5

It may be a conservative estimate to say that, with the present technic and the class of cases treated, the percentage of durable results ("arrests" or "cures") is about 12 per cent , while in more than double this number (29.2 per cent of 1,108 cases analyzed in this paper), a palliative effect is produced, which is of variable duration The sum total is a distinct increase of the chances of the advanced case which does not respond to the usual methods of treatment

TABLE 3—COMPARISON OF RESULTS OBTAINED BY AMERICAN AND SOME EUROPEAN OBSERVERS

	American Observers		European			
	No.	Per cent.	Zink (Observed Six Months to Two Years) No	Brauer and Spengler (Six Mos. to Five Yrs) No	Total No	Per Cent.
Cases	1 108		110	114	224	
Failure		14 6 } 49 1	29	26	55	24 6 } 42 9
Unimproved		18 3	16	6	22	9 8
Dead		16 2	(worse) (number dead?)	19	19	8 5
Improved		29 2	34	36	70	31 2
Quiescent		10 8 } 21 7	22 (working)		22	9 8 } 25 9
Arrest or cure		10 9	9 (cured or working)	27	36	16 1

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[28] Zink Internat. Centralbl f d ges Tuberk Forsch January 1914

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Pleural effusion, the most frequent complication in the course of artificial pneumothorax, is variously ascribed to infection, to progressive irritability of the pleura, caused by trauma, to slowing of lymphatic circulation in the compressed lung, to the breaking of tubercle through the pleural surface, etc. The frequency of its occurrence, in the experience of some observers is dependent on the extent of the process and duration of treatment. Strict asepsis and careful technic may be a considerable factor in its prevention. At present, its incidence is estimated at from 30 to 50 per cent.

Of 784 cases, reported by fifteen American observers, who recorded in their reports the frequency of this complication, pleural effusion occurred in 113, or 14.4 per cent., of the total number of cases. The small percentage may be due to the inclusion of a large number of cases reported in the early period of treatment and omission of small effusions, the presence of which can be ascertained only by frequent physical and Roentgen examinations.

There is considerable difference of opinion as to the effect of effusion on the further progress of a case treated by gas compression. While improvement does occur in a certain percentage of cases, occurrence of effusion is regarded by most experienced observers as a complication affecting the future outlook of a case. This is borne out by the frequent occurrence of adhesions preventing future compression and frequent extension of the process in the opposite lung. We are in need of more comprehensive data on this subject.

Gas embolism is a rare incident in pneumothorax therapy. Its onset is sudden. The manifestations vary from temporary unconsciousness, convulsions, temporary hemiplegia and gradual recovery, or fatal termination in a few hours to two or three days, to the gravest form, in which a severe coma without any preliminaries results in almost instant death.

The air or gas may come through the needle, from the lung (cavity) or pleural space. The pulmonary veins, because of the negative pressure in these vessels present the most favorable condition for the entrance of gas. The incident is more frequent when pleural adhesions are penetrated by the needle, the gas being introduced through one of the veins into the circulation (Brauer). Fatal termination results from the final lodgment of air or gas in the coronary arteries or vessels of the brain (Saugman). According to Wolff-Eisner, thrombi are responsible for some of the incidents described under the head of air or gas embolism.

It is agreed that this grave incident is almost impossible with intelligent interpretation of manometer findings (sustained negative pressure and wide oscillations).

According to Matson, "this accident should belong to the first historic period of pneumothorax therapy."

In Saugman's experience, one death occurred between the years 1906 and 1910 (with ninety-eight patients and 2,000 punctures), between 1910 and 1912, one death (sixty-three patients and 1,200 punctures), between 1912 and 1914, with more careful technic (forty-nine patients, 2,000 punctures), no mishaps.

Reports of this rare but grave incident are scattered over the European literature (Brauer, four cases, Saugman, 2, Zink, 1, etc.). Forlanini encountered the accident four times in 10,000 operations (two fatal).

Of 1,058 cases treated by twenty-two American authors, three incidents of gas embolism occurred in a group of 191 cases reported by three authors, while 867 cases, treated by nineteen authors, were free from the incident. The latter group includes seventy-four cases treated by the author (700 injections).

The incidents described, in the American and European literature, under the name of *pleural shock* (pleural reflex or eclampsia) vary from slight manifestations of faintness to disturbances of various degrees of the circulatory, respiratory and nervous motor and sensory systems. With few exceptions, the manifestations, as given, are mild, of passing nature and with no after-effects. A few fatal terminations were recorded by European observers.

The present tendency (particularly Brauer) is to ascribe many of the grave manifestations included under "pleural reflex or shock" to "gas embolism."

The mechanism of production of pleural reflex is given by Russell[29] as follows: "afferent impulses conveyed to medulla along vagus, whose terminal fibers rendered unduly sensitive by compression, or inflammation are irritated by the needle." Death is generally ascribed to spasm of cerebral or cardiac vessels.

Anesthesia of the needle track (novocain from 0.5 to 1 per cent., epinephrin 1: 10,000) through the skin, the underlying tissues and pleura, is urged by most observers as a preventive of this complication, and yet the incident was absent in groups of cases treated without any anesthesia (E. A. Gray, 145 cases, 1,200 injections, myself, seventy-four cases, 700 injections, and others).

Saugman reports one case of pleural shock in 104 cases (paralysis of heart, death), Forlanini, twelve occurrences in 134 patients, 10,000 injections.

Of the 1,058 cases in the American literature, analyzed in this paper, pleural shock occurred twenty-six times, or in 2.5 per cent. of cases. There were no fatalities.

Of the 1,122 cases reported by twenty-four American observers in the last two years or more, the incidence of various complications, occurring in the course of treatment, was as given in Table 6.

TABLE 6.—COMPLICATIONS REPORTED BY AMERICAN OBSERVERS

Complications	No.
Pleural effusion	113
Extension of process in opposite lung	58
Bleeding of other lung	7
Pleural shock	26
Gas embolism	3
Spontaneous pneumothorax	10
Bilateral pneumothorax	2
Pyopneumothorax	13
Cardiac dilatation and heart failure	4
Torsion of heart and blood vessels	1
Total	237*

* Twenty-one per cent. of the total number of cases.

CONCLUSION

Experience with artificial pneumothorax in the treatment of pulmonary tuberculosis is gradually modifying the sphere of its application. The trend is toward its use, regardless of stage, in all progressive cases (particularly with unilateral involvement) which fail, after sufficient trial, to respond to strict sanatorium regimen.

Complications incident to the employment of this method, the great importance of continuous strict observation and thorough clinical, laboratory and Roentgen study of idual case, the rest periods essential af ation, the inability of outlining in advance the time of reinflations, in short, the close dependence of each successive step in pneumothorax therapy on the varying condition of the patient, are all factors which call, in the majority of cases, in the interest of safety and best results, for hospital or sanatorium supervision, at least for a few months, of each individual case in which the method is being applied Close attention to every important detail of technic, as well as strict asepsis, is also less of a problem, under such conditions, regardless of the excellent results obtained by some observers, in dispensary and office practice

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[29] Russell, quoted by F New York Jan. 2, 1915.

The present tendency, grown out of experience, is toward greater conservatism in the selection of cases, a selection based on thorough preliminary study and full consideration of the possible effect of compression *in the individual case* Conservatism needs to characterize each successive step in the gradual attainment and subsequent maintenance of a satisfactory compression, with avoidance of too frequent reinflations and excessive intrapleural pressure This attitude is very important, with a method the application of which cannot be subject to rule but is dependent on the condition of each individual case

Through improvement of various details of technic and greater conservatism of action, pneumothorax therapy is gradually finding its defined place in the treatment of cases of pulmonary tuberculosis which do not yield to other methods

25 East Washington Street.

LESIONS OF THE LUMBOSACRO-ILIAC REGION

A STUDY IN THE VARIOUS TYPES *

HARRY LESLIE LANGNECKER, M D
SAN FRANCISCO

In asking your indulgence for a few minutes in the consideration of lesions involving the lumbosacral and the sacro-iliac articulation, I do so because of the importance of recognizing the underlying conditions as early as possible

In an endeavor to understand the mechanism of the lumbosacral joint, with its many peculiarities, and the too frequently resulting strains to the sacro-iliac joints, it must be remembered that the lumbosacral joint is intimately associated with the sacro-iliac joint function

Statistics, which I have gathered from my study of occupational or industrial diseases, show lesions of the lower back to be one of the most frequently occurring conditions

Anatomic variations from the normal structure of the bones of this region are very common Very often these anomalies do not become evident until excessive or repeated joint strain bring them under observation

In the study of cases representing the various types, it is impossible to isolate a type as belonging to only one group For a traumatized joint may later become the seat of an inflammatory process An abnormal bone formation does cause a lateral curvature Relaxed ligaments have produced a defective balance of the whole body With this point in mind, however, namely, the interrelation of the different types, I have grouped these lesions into, first, traumatic, with or without anatomic variations, second, static, and third, toxic

In the traumatic group are included cases in which injury is the principal factor These lesions are further classified into, first, acute types, in which the trauma is recent and primary, and second, chronic, in which the trauma is recurrent and of longer duration

In the acute types the lesion is unilateral, with or without bone displacement It is the result of direct strain or indirectly through muscular action In these cases, the sacro-iliac joint receives the entire force of the effort and the bony surfaces of the sacrum or the ilia may slip, or a rupture of the ligaments may occur

These conditions are demonstrated when bending forward in the act of lifting a heavy object, or in jumping and giving the trunk a sudden twist on the pelvis, or when in swimming and diving, quick hyperextension of the lumbar spine occurs, or during childbirth, when instrumental interference is necessary, or during or following surgical operations with a general anesthesia

The symptoms depend on the amount of injury rather than on the severity of the cause producing it Pain usually accompanies the injury It is sharp and lancinating in character *and is increased by all motions It is present about the affected joint or is referred up* the back, over the buttocks, or down the leg Deformity shows as a forward stoop, a list to one side or flexed leg at hip Regular tests demonstrate all motions limited The local signs are obliteration of the lumbar curve, *tenderness, or very often, a slight* bony prominence over the injured area The Roentgen ray may show an anatomic variation or a displacement of one of the bones of the lumbosacro-iliac articulations

In the chronic types, because of repeated strains, there is relaxation with occasional displacement Adhesions are present The lesion is unilateral although later involvement of the other sacro-iliac joint does take place Cases vary considerably in character For example, lesions may result from repeated movement of a broad transverse process of the fifth lumbar vertebra pressing on the ilium until a backward displacement of the sacrum on the opposite side is produced, as in wood chopping, or continual slipping of the flattened articulating processes of the fifth lumbar vertebra, as in automobile repairing, or too often sliding of *articulating surfaces of sacrum and* ilia on each other, as in marked relaxation of the joint, or subluxation of an intervertebral cartilage, as in repeated displacements of the lumbosacral joint

The symptoms are intensified with each new strain Pain may be slight or severe Irritation of the lumbosacral nerves, after their emanation from the vertebral foramina, gives pain over buttocks, hip and down the leg This is increased by standing or walking and is less severe after lying down Deformity may show as a decided forward bending or list to one side with prominence of the hip on the opposite side The lumbar spine is flattened In many of these cases the deformity can be corrected, but relapse occurs if sufficient support is not used Regular tests elicit limitation of motion only in certain directions Locally, there is considerable tenderness over the affected joint Referred pain can be started by pressure in this region. There is spasm of the muscles, movement of the joint is guarded and painful. The Roentgen ray usually demonstrates separation or displacement of bones of the joint. Bony anomalies likewise are thus discovered.

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* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association, San Francisco, June, 1915

In the static group, faulty posture is the most striking feature presented. The muscles and ligaments and therefore the joints of the lumbosacro-iliac region are relaxed. The continual strain on these joints increases the lumbar curve and tilts the top of the pelvis forward. In the variation from the proper poise, the mechanics are disarranged and the physiologic functions of the body are disturbed. This type of lesion is usually bilateral.

A defective posture may result from general debility, which reduces the quality of the muscles and ligaments, or anatomic variations, which may cause a lateral curvature and later a scoliosis, or incorrect clothing, which may compress the trunk or give inadequate support, or lipomatosis or general increase in weight, which increases the strain on the muscles and ligaments of the pelvic girdle, or faulty foot or leg conditions which give unequal base of support, or pregnancy when relaxations of the pelvic joints are very marked, or certain occupations which require fixed positions, or sagging abdominal walls with the accompanying visceroptosis. The long, slender, loose-jointed type of individual, with few exceptions, makes up the greatest number of cases in this group.

The symptoms of the static type are easily recognized. The onset is gradual. The slumped or relaxed attitude in standing is marked. There is a general weakness in walking and standing rapidly causes fatigue. Patients cannot lie comfortably on the back, are restless at night, usually sleep on the side with the thighs flexed. Backache is most constant. Locally, tenderness over all the joints is found. There is always a lordosis, while the posterior back muscles are in a state of spasm. The regular tests show unusual mobility and relaxation of the joint. The Roentgen ray is useful in this group as a method of eliminating the other group types.

In the toxic group are found those types of cases in which the inflammatory element predominates. Continual irritation of the lumbosacral and the sacro-iliac articulation, usually with relaxation, produces a chronic congestion in this region and thus infection is easily started.

While tuberculous syphilitic, typhoid and gonorrheal lesions frequently occur in this region, still infection, or toxins, primarily involving the nasal, oral, pharyngeal and gastro-intestinal tracts, produce a pathologic process — an osteo-arthritis — which demands much attention in diagnosis and prognosis. Extension of disease from the pelvis, or following gynecologic procedure, or obscure toxemias resulting from improper metabolism, gradually settle in this region and cause an arthritis.

The symptoms show the onset to be gradual, and secondary to inflammation or toxemia, present elsewhere in the body. When acute, the joints are swollen, the soft tissues are thickened and very tender. The condition is aggravated by standing, sitting or walking. The joints are extremely sensitive to any motion which will induce strain on the pelvic girdle. In the chronic cases, a burning, aching pain is experienced over the sacro-iliac area. Pain, usually dull in character but with sharp paroxysms, may be referred up the back, over the buttocks and hips, and down the posterior aspect of the leg to the heel. Frequently there is disturbance of sensation in the lower extremities. Posture does not relieve the pain. It is in this group of cases that narcotics are resorted to most often to overcome the pain. The deformity causes the patient to hold the lower back stiffly. A marked forward bending or a list to one side is present. There is no lumbar curve, but a prominence of the dorsal spine. The regular tests are usually restricted in every direction. Locally, the flat, rigid lumbar spine, the muscular spasm, the limited area of tenderness and the impossibility of attempted motion are observed. The Roentgen ray usually shows a pathologic process involving some part of the lumbo-sacro-iliac articulation.

In conclusion, I wish to state that differentiation of the various types is not difficult if one bears in mind the fact that in the traumatic group, injury with the sudden onset of symptoms is most important; in the static group, the defective posture with marked relaxation of the joints is present, and in the toxic group, the history of an inflammatory process with the tendency to fixation of the joints is found.

Surgical Division, Leland Stanford Junior University, School of Medicine.

ABSTRACT OF DISCUSSION

Dr. C. C. Crane, San Francisco: While I wish to elaborate somewhat on the anatomic variations to which Dr. Langnecker referred I also wish to challenge his statement that "Posture does not relieve pain." Radiograms which I have show various mechanical faults which are productive of pain, deformity and disability. I have divided them into three classes: potential trouble makers, actual trouble makers and proximal trouble makers. The symptoms presented by the patients were various and numerous but all of them were relieved by conservative measures.

Dr. Fred J. Fassett, Seattle: I think it would not be out of the way to have some one who has the facilities and the clinical material make a routine examination of a large number of normal adults, so that we may form some sort of an estimate as to how many people are going about with large transverse processes and other anatomic variations without any symptoms at all. Of course, it is only the ones with symptoms that come to the physician, and it seems to me that we have a very one-sided view of the subject thus far.

Dr. Leonard W. Ely, San Francisco: In the orthopedic department of Stanford University with a complete outfit and all the facilities to work with, we are entirely at sea on this subject of lumbo-sacro-iliac lesions. I have become discouraged trying to replace these so-called slipped joints—in trying to get the painful ones relieved—and we are ready and eager to put all the facilities that we have at the disposal of anybody who will undertake to help us clear this matter up. I have become discouraged, but a ray of hope, I may say, has broken on me from what Dr. Langnecker has said.

Dr. J. T. Rugh, Philadelphia: In regard to Dr. Fassett's request, I had one of the leading roentgenologists in Philadelphia for the past six months make a study of the cases which came under his care for all abdominal conditions. He has told me, after looking over a series of probably four or five hundred of these cases, that he finds some anomalies in this part of the spine in a very large percentage of the cases. In fact he is coming to look on it as rather unusual to find the normal.

Dr. John Ridlon, Chicago: I should like to ask that in closing, Dr. Langnecker say whether in any of these strained or slipped joints—sacro-iliac or lumbosacral region—he has had anything in the nature of atrophy of the limb develop on the painful side.

Dr. C R McClure, Portland, Ore At present through the courtesy of Dr Coffey's office in Portland we are having observations made on this region of the lower back, and I hope at some future meeting to make some reports concerning our study of this region We see a great many of these cases, and, like many of the men here, I sometimes doubt the value of the Roentgen ray in a diagnostic way [illegible] e of the frequency with which these anomalies are [illegible] id in people who have no symptoms one way or the other

Dr. Roland Meisenbach, Buffalo, N Y That the pelvic joints, especially the sacro-iliac and sacrolumbar, are so frequently involved in the sciaticas and the backaches which are met with, can no longer be doubted The results of the treatment for these conditions, with the relief given the patient, have spoken for themselves I believe that the most important matter for our consideration in diagnosis is to differentiate between the sacro-iliac and the sacrolumbar lesions It is true that in some we have both these joints involved, it must also be remembered that occasionally we may have backache due to the strain or injury to the sacrolumbar joint in a person who may have other conditions present, as, for instance, a very heavy person with leukemia may sustain an injury to the sacrolumbar joint due to the actual weight of the abdomen, and in relieving the strain we are naturally relieving but one of the symptoms Another type of sacro-iliac and sacrolumbar lesion which is more frequently met with is one of trauma in which there also exists pelvic inflammation, or glandular inflammation, which has attacked the pelvic joints or has weakened them so that they are subject to trauma One has only to remember his anatomy and note the variations in the sacrolumbar joint, both as regards the articular processes and also the variations in the transverse process in different individuals I have met many times a type of sacrolumbar lesion in which the patient has had recurrent backache, which I am sure has been due to a very shallow sacrolumbar articulation In this type it has been sometimes difficult to illustrate the condition by means of a roentgenogram In regard to the roentgenogram, I cannot agree with Dr Langnecker If he had used the word "occasionally" instead of "usually," I think it would have been more to the point. In cases with a long or thickened transverse process of the fifth lumbar vertebra, which may or may not articulate with the sacrum or ilium, or in cases in which the sacro-iliac joint has opened and the sacrum has dropped or tilted, it is not very difficult to illustrate by means of the roentgenogram, but those cases (and they are frequently met with) in which the sudden movement of the body may quickly incapacitate the individual, causing such a severe pain that the person is unable to take another step, are rather difficult to illustrate by means of the roentgenogram I believe this type of case to be that of the shallow sacrolumbar joint, in which the joint articulations are of such construction that they easily become dislodged Many of these do not seek relief at the first attack, but usually after having rested or having had several attacks Also in the type of loose sacrum it is difficult to demonstrate by means of the roentgenogram, that is, the single flat plate will show nothing, but the stereoscopic roentgenogram will often show the sacrum slightly tilted Dr Langnecker has covered the ground of symptoms very well One of the best illustrations of the severe sciatica which was caused by motion in the sacro-iliac joint is that of metastatic carcinoma of the sacrum following, as in the case I have presented, a removal of the breast for carcinoma In this case, the slightest motion of the ilium on the side in which the sacro-iliac joint is involved causes a severe sciatica

Dr. C L Lowman, Los Angeles We have a skeleton which shows an anomaly of the first sacral—just a small lateral process on one side, like a lumbar vertebra, the full length and width of ala on the opposite side, with a joint between it and the second sacral, an absolutely flat articular process on the right side, and a vertical process on the other This allowed a great deal of rotation of the sacrolumbar segment forward around this vertical process as an axis, with a narrowing of the posterior foramina Another similar case was presented to me by my radiographer This case was treated by a chiropractor as a tuberculous spine The roentgenogram showed an assimilation of the first sacral, which tried to be a lumbar on one side

Dr H L Langnecker, San Francisco In reply to Dr Ridlon's question, I would say that in a great number of cases, especially those of the lumbosacral region, there seems to be an atrophy of the muscles of the anterior part of the thigh, the atrophy of the other muscles having been consistently noted

Dr John Ridlon, Chicago By measurement?

Dr. H L Langnecker Yes, by measurement. It is one of the signs These conditions are usually studied by stereoscopic roentgenograms, all the important ones were in my cases I found that the study of this class of cases was extremely interesting There is much, as yet, to be said about them I can only repeat what one of the orthopedic surgeons—a man who has done more, probably, on lesions in the sacro-iliac region than anybody else in the country—told me. He said that there was a great deal yet to be known about lesions in this part of the body, and that he thought when the final verdict was given it would be an anatomic one

LYMPHOID MARROW AND TUBERCULOSIS

AN EXPERIMENTAL STUDY *

LEONARD W ELY, M D
SAN FRANCISCO

In a paper read before this section at its meeting in 1914, Mr John Fraser made the statement that red marrow was immune or practically immune to tuberculosis This statement was based on the results of attempted inoculation of the long bones of laboratory animals, whose marrow is of the red or lymphoid variety The question is of great importance, and we have been conducting a series of experiments in the laboratories of the Stanford School of Medicine to test the accuracy of Mr Fraser's conclusions

Dr John F Cowan and I conducted one series, on which we shall report later Dr Jean Oliver and I conducted another series which I shall report here[1]

The animals used were rabbits and guinea-pigs With the former, bovine tubercle bacilli were employed (Cutter Laboratory bovine strain, K 9), with the latter, human bacilli from a virulent strain supplied by Dr Hirschfelder The animals were anesthetized with ether, and the limb to be operated was shaved Strict asepsis was observed, a small incision was made in the leg, a trephine opening was made into the tibia, and with a hypodermic needle a few drops of a suspension of bacilli in normal salt solution were injected directly into the marrow The wound was then sewed up with catgut and was painted with collodion

At varying intervals before the operation and sometimes after it, a 1 per cent solution of trypan blue was injected into the animals, 20 c c into the ear vein of the rabbits, and 2 c c subcutaneously into the guinea-pigs The animals were killed at varying intervals after the operation

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* From the Leland Stanford Jr University Laboratory of Surgical Pathology

* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association, San Francisco, June 1915

* Owing to lack of space, this article is abbreviated in The Journal by omission of protocols of animal experiments. The article appears in full in the Transactions of the section and in the author's reprints A copy of the latter will be sent by the author on receipt of a stamped addressed envelope.

[1] After the main question of the vulnerability of the marrow had been determined, the work was divided Dr Oliver continued his investigation on the histologic features of the tubercle

Our intention was usually to inject into the metaphysis of one tibia and into the central canal of the other, but in point of fact the canal extends so high in the tibia that practically all injections were into it

The specimens were hardened in 10 per cent formaldehyd solution or in alcohol, dehydrated in alcohol, mounted in paraffin, and stained with hematoxylin and eosin, with the Van Gieson stain, and for tubercle bacilli with the Ziehl stain

A complete description of the findings is appended The results will be summed up here

EXPERIMENTS ON RABBITS

Rabbit 41 0 Killed fifty-one days after injection Right tibia, tuberculosis present macroscopically and microscopically No tubercle bacilli found Left tibia kept for gross demonstration Tuberculosis demonstrated macroscopically in it.

Rabbit 42 0 Killed forty days after injection Both right and left tibias showed tuberculosis and tubercle bacilli present.

Rabbit 43 0 Killed fifty-four days after injection, blocks lost.

Rabbit 44 Killed on day of operation Right and left tibias showed neither tuberculosis nor tubercle bacilli

Rabbit 45 Killed thirty-three days after operation Both right and left tibias showed tuberculosis macroscopically and microscopically but no tubercle bacilli in either

Rabbit 46 Killed thirty-two days after operation Both right and left tibias showed tuberculosis macroscopically and microscopically, tubercle bacilli in neither

Rabbit 47 Killed thirty days after operation Both right and left tibias showed tuberculosis macroscopically and microscopically, tubercle bacilli were found in the right, none in the left

Rabbit 49 Killed one day after operation Right and left tibias showed neither tuberculosis nor tubercle bacilli

Rabbit 75 Killed two days after operation Right and left tibias showed no sign of tuberculosis or tubercle bacilli

Rabbit 76 Killed seven days after operation Both tibias showed neither tuberculosis nor tubercle bacilli

Rabbit 77 Died fifteen days after operation Both tibias showed neither tuberculosis nor tubercle bacilli

Rabbit 78 Killed twelve days after operation Right tibia showed tuberculosis microscopically and a few tubercle bacilli

Omitting Rabbit 43 0 whose marrow specimens were lost, we have here 11 rabbits In 6 tuberculosis was demonstrated, in 5 it was not The 5 in which it was absent were killed respectively the day of operation, and one, two, seven, and fifteen days after operation All animals killed after a greater interval than fifteen days, and one after an interval of twelve days showed distinct marrow tuberculosis In other words, in every animal allowed to live over one week, save one, tuberculosis was demonstrated

Tubercle bacilli were recovered from both tibias of Rabbit 42 0 (forty days), from the right tibia of Rabbit 47 (thirty days), and from the only operated tibia in Rabbit 78 (twelve days)

Others have noted the difficulty of recovering bovine tubercle bacilli from the marrow In two tibias of our series they could be found only by diligent search Typical giant cells are rare Friedrich[2] made this observation

The "fibromyxomatous" marrow described by Fraser is a practically constant phenomenon in the neighborhood of the tuberculous marrow, but is not peculiar to tuberculosis It is probably present in most slow marrow inflammations, and we regard it as Nature's protective reaction against the spread of infection, not as a mysterious change which the marrow undergoes before it can be invaded, and when tuberculosis is in the neighborhood.

Another very suggestive fact that we (Dr Cowan and I) have observed in another series of experiments (not tuberculosis experiments) on rabbits' cartilages, is the presence of a thin strip of fatty marrow which frequently is present near the circumference of the end of the femur (that is, close to the attachment of the capsule) We believe this band of yellow marrow is responsible for Fraser's contention that the lymphoid marrow of the bone end must change to fatty marrow before it can be invaded by tuberculosis from the synovial membrane

Conclusion The lymphoid marrow of rabbits' bones is a good field for the growth of bovine tubercle bacilli

EXPERIMENTS ON GUINEA-PIGS

Six guinea pigs were employed, and were killed or died, respectively, four, six, six, nine, ten and fifteen days after operation All showed tuberculosis of the marrow, and in all tubercle bacilli were demonstrated

Conclusion The lymphoid marrow of guinea-pigs' bones is a good field for the growth of human tubercle bacilli

It is now five years since the theory was first published that the location of tuberculosis in bone was determined by the presence of red or lymphoid marrow I should like at this time to sum up the evidence to date

1 Tuberculosis is found only in those bones or regions of bone where lymphoid marrow is present

2 Marrow tuberculosis is more common in children, whose bones contain more red marrow As age advances, marrow tuberculosis becomes rarer and less destructive

3 After resections in adults, if secondary infection be avoided, the disease disappears The best authority available says that after resections the lymphoid marrow disappears

4 Experiments show that lymphoid marrow is an excellent field for the growth of tuberculosis

Two links are missing in the chain of evidence, that is, the demonstration of the particular cells in the lymphoid marrow which are responsible for the disease there, and the proof that tubercle bacilli will not grow in yellow or fatty marrow It will be instructive also to learn the exact morphologic changes which take place in the marrow [illegible] on

Lane Hospital

ABSTRACT OF DISC

Dr. John F Cowan, San Francis
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John Fraser of Edinburgh It is [illegible]
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row with tubercle bacilli, that in order for
become a fertile field for the growth and
tubercle bacilli, it is necessary for it to
changes, which he describes as a colloid
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row are due to an obliterat
a tuberculous toxemia arising
in some other portion of the

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2 Friedrich Deutsch Ztschr f Chir 1899 liii 532

in uncomplicated cases of tuberculosis much toxemia Tuberculous toxins cause lesions locally, that is, in their immediate presence, not at a distance by diffusion of the toxins At least, the kidneys never show any effect which could be ascribed to the elimination of a tuberculous toxin through them In these experimental animals we do not find evidence of tuberculosis in other parts of the body Postmortem examination shows tuberculosis of the marrow, but no uberculous lesions in the lungs, lymph nodes, etc, so that it is difficult to ascribe the local vascular changes to a general toxemia Arterial degeneration is not found as a frequent condition in tuberculosis In fact, in advanced cases of tuberculosis, instead of finding arteriosclerosis, there is an atrophy of the vessels, as there is an atrophy of the other tissues of the body However, there are changes in the vessels in the immediate vicinity of the tuberculous process, but these are not due to a general toxemia, but rather to the local chronic inflammation In tuberculosis we do not find necrosis as an early factor One may see endothelial leukocytes filled with tubercle bacilli and yet one may not find any degenerative changes in these cells I have had the privilege of examining Dr Ely's specimens In some of them characteristic tubercles are seen, but with slight or no evidence of changes in the blood vessels, and this absence of an obliterating endarteritis is probably due to the fact that these animals were killed at short periods after inoculation It seems highly probable that the bone marrow of the experimental animals may be primarily infected by tubercle bacilli

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REVIEW OF RECENT STUDIES IN TRICHINIASIS

W W HERRICK, M D
NEW YORK

Trichiniasis is not a mere medical curiosity, it is a common and important disease and one all too seldom recognized A disease having an average mortality about half that of typhoid fever, and in some epidemics a mortality rising to 16 or even 30 per cent, as in the Hedersleben epidemic[1] in 1865, is serious Proof that it is a common disease may be had from studies such as that of Williams,[2] who in 105 unselected necropsies in the state of New York found trichinella embryos in 5 4 per cent In other civilized communities, this parasite is found in from 0 5 to 2 per cent of necropsy subjects About 6 per cent of American swine, and a larger percentage of American rats are infected

Recent years have added much to our knowledge of trichiniasis The life history of the parasite and its methods of migration and distribution in the body of its host have been quite conclusively worked out The symptoms have been adequately described and new methods of diagnosis brought into use It remains to study more extensively certain symptoms of the disease, with a view to a more complete understanding of some as yet unsolved problems

One of these symptoms is fever It is interesting that the *Trichinella spiralis* is the only metazoic parasite that, infesting man, causes fever with constancy Filariasis, hydatid disease, bilharziasis may give rise to fever, but exceptionally In trichiniasis alone, of the parasitic disease of this class, is fever almost always present Such fever may be due to secondary bacterial infection, to the toxic products elaborated by the trichinella, or may be a true protein fever from the parenteral introduction of alien material, either in the form of the embryo of the trichinella itself, or a devitalized body protein formed as a result of the activities of the parasite

Evidence in favor of the first hypothesis is contradictory The female trichinella within a week of infection burrows beneath the submucosa of the duodenum, often destroying two or three villi, and deposits embryos in the lymph spaces of the submucosa, thus giving opportunity for micro-organisms to gain entrance to the lymph channels and blood stream (Frothingham[3]) In this way a bacteremia may arise Bacteremia in trichiniasis in man is rare Staubli[4] mentions a severe case in which there was very high fever, and in which streptococci in pure culture were found in the blood and urine In the second case, deep intramuscular abscesses containing numberless staphylococci were found Friedreich[5] mentions the frequency of furunculosis as a complication of trichiniasis In one of his cases the embryo was found in the midst of one of the furuncles along with staphylococci

That meat containing bacteria and trichinella can give rise to a double infection seems fairly well established by a report of Chiari and Zorkendorfer[6] of an epidemic in which sixty-eight persons were made ill by eating sausage Twenty-one of these patients showed severe symptoms with notable enlargement of the spleen Four of the patients died and came to necropsy The muscles of all these showed trichinella embryos, and the spleen and blood, anthrax bacilli The *mettwurst* causing this epidemic was made from pork and a variety of other meat some of which was, in this instance, thought to be from an animal infected with anthrax Staubli[4] examined the peritoneal exudate and blood from the hearts of two guinea-pigs dying from trichiniasis, and in one found a diplococcus, in the second, streptococcus in both regions Romanovitch[7] could find no bacteria in infected tissue on section However, on examination of the blood of thirty-six trichinous rats, twenty-six showed bacteremia Of fourteen such guinea-pigs eleven showed bacteremia The bacteria were of various kinds, streptococci, staphylococci, etc Gruber[8] made cultures from the heart blood of fifteen guinea-pigs infected with the trichinella, only three were positive These were in such small numbers that Gruber thought them probably contamination

In the search for clinical data on the question of bacteremia in trichiniasis I have reviewed the cases in the Roosevelt and St Luke's Hospitals of New York observed during the past five years, and have found that of ten cases with blood culture in none were bacteria demonstrated

The weight of evidence is against the bacterial origin of the fever of trichiniasis Additional argument is the conclusion of McNeal and Chace,[9] who found that in the normal duodenum bacteria are few

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[1] Cited by Staübli Trich[illegible], Wiesbaden, 1909, p 16

[2] Williams The Frequency of Trichiniasis in the United States, Jour Med Research, 1901, vi, 64

[3] Frothingham, C Jr A Contribution to the Knowledge of the Lesions Caused by Trichinella Spiralis in Man, Jour Med Research, 1906, x, 483, The Intestinal Lesions Caused by Trichinella Spiralis in Rats, Arch Int Med, January, 1909, p 505

[4] Staubli Trichinosis, Wiesbaden, 1909, p 141

[5] Freidreich Beobachtungen uber Trichinosis, Deutsch Arch f klin Med, ix, 459

[6] Chiari and Zorkendorfer Ueber die Aetiologie einer Massenerkrankung in Teplitz Schönau nach dem Genusses von Fleisch und Wurstwaren (Trichinose und Milzbrand), Ztschr f Heilk, 1894, xv 435

[7] Romanovitch Recherches sur la trichinose, Ann de l Inst Pasteur, 1912 xxvi, 351

[8] Gruber Neue Studien über die Pathologie der Trichinose, Munchen med Wchnschr, 1914, lxi, 645

[9] McNeal, Ward J, and Chace, Arthur F A Contribution to the Bacteriolo[illegible] the Duodenum, Arch Int Med, August, 1913, p 178

It seems more probable that the fever of trichiniasis is a true protein fever in the sense of Vaughn,[10] that it is due to the parenteral introduction of alien protein material It has been estimated[11] that in a severe case of trichiniasis as many as 50 000,000 embryos escape into the circulation during the acute stages of the disease Virchow[12] and later, Leuckart,[13] found numbers of embryos in the serous cavities It is believed many perish here and doubtless in other tissue spaces This process insures the absorption of no small amount of foreign protein The matter, however does not rest here The question is carried much further by the work of Flury,[14] and of Flury and Groll[15]

These observers, in a study of the chemistry and toxicology of the disease, brought out several important points They found trichiniasis in animals accompanied by definite changes in muscle metabolism While the embryos became rich in glycogen during their intramuscular development, the invaded muscles became relatively or absolutely glycogen-free Liver glycogen was also reduced The muscles contained increased amounts of water, also of creatin and purins in general, ammonia, lactic acid and volatile acids, while the total acidity was heightened Corresponding with these alterations in the chemistry of muscle tissue the urine during the first five to seven days of the infection gave indication of a retention of the nitrogenous products of muscle catabolism which was followed after five or seven days by an abnormally high excretion of creatin, purin bases, lactic acid ammonia, indican, and fatty acids The strongly positive diazo reaction is doubtless related to this factor Flury found also a poison in the invaded muscle resembling curare in its effect on the neuromuscular mechanism of the frog, an observation of clinical interest as partly explaining the extreme muscular weakness of the disease This poison belongs to the caffein group of purin bases, and bodies of allied chemical and pharmocologic properties The blood showed hydremia, a lower specific gravity of the serum, increased fragility of the erythrocytes high content of nucleoprotein and strong albumose reaction

Flury and Groll attribute the symptoms of the disease to poisons that are both exogenous—developed from the trichinellae themselves, and endogenous—formed by the destruction of muscle tissue These consist chiefly of purin bases, adenin, guanin, hypoxanthin, xanthin, and other split products of muscle protein which act on the muscles themselves, on the nervous system and the blood vessels The extravasations of blood in the lungs, connective tissue, meninges and other tissues are, in Flury's opinion, brought about by capillary poisons elaborated in the trichinous muscle probably by the trichinellae themselves There is, therefore, both a quantitative and qualitative alteration in muscle catabolism with production of protein split products apparently peculiarly toxic

Devitalization of such large amounts of muscle tissue by the activity of the trichinella gives rise to proteins which have an action similar to alien proteins, since *korpereigend* protein devitalized becomes physiologically *korperfremd*

It seems quite clear that with the invasion of the blood stream and tissue spaces by millions of embryos and with the breaking down of large amounts of muscle tissue we have in effect, the constant inoculation of the patient with alien protein material, a condition which, as is well known, gives rise to fever

The most striking and constant symptom of trichiniasis is the increase in eosinophils in the blood This is not a relative increase alone, it is also absolute A high total leukocyte count is quite as constant as the high eosinophil percentage This eosinophilia arises during the migration of the embryos, from five to seven days after infection, and may persist years after the symptoms have subsided, or may disappear within a few weeks As an instance of the persistence of this feature, I mention a case under my own observation The patient, a woman of 24, ate *lachschinken* Christmas day, 1911 She became ill Jan 1, 1912, and was confined in bed for seven weeks with very severe trichiniasis, complicated by femoral phlebitis In December 1914, almost three years after the onset of the illness, the leukocytes were 9,000, the eosinophils 9 per cent

From complete obscurity the question of the cause of this cellular reaction has become at least partially clear That the eosinophilia of the helminthides is a reaction to the invasion of the body by alien protein is a fact apparently well established by the work of a number of observers Ahl and Schittenhelm,[16] Schittenhelm, Weichardt and Grisshammer,[17] Schlecht,[18] Schlecht and Schwenker[19] have by a variety of experiments shown conclusively that the parenteral introduction of alien protein and of many of its split products into guinea-pigs, dogs and rabbits is followed by notable eosinophilia Herrick,[20] working with an extract of the *Ascaris lumbricoides*, found a similar increase of cells resulted from injection of such extract at intervals of five days or more, but that repeated injections at shorter intervals did not bring about such a result It was found, further, that the substance in the extract of the ascaris giving rise to the cellular reaction was a protein By this observation the eosinophilia of ascaris infestation and therefore presumably of other helminthides may be linked with the work of the German observers cited above The mechanism of this reaction is obscure The interpretation most in accord with experimental and clinical facts seems to be that proteins of *körperfremd* nature or their split products bring about the formation of proteolytic enzymes which have a chemotac influence on the eosinophils as shown by local o eral eosinophilia This theory has been expres a number of workers—most recently by Schw whose monograph with its 2,758 references remarkably complete catalogue of facts about eosinophils

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[10] Vaughn Protein Split Products Philadelphia, Lea and Febiger 1913 p 373

[11] Heubner Beobachtungen uber Trichinosis, Jahrb, Jena 1911, xxi 569

[12] Virchow Ueber Trichina spiralis Virchows Arch f path Anat. 1860, xviii 535

[13] Leuckart Die menschlichen Parasiten Leipzig 1876

[14] Fl[illegible] Trichinosis Deutsch. med. Wchnschr 1913 xxxix 1388 Beitrage [illegible] Chemie und Toxikologie der Trichinen Arch f exper Path u P[illegible]akol 1913 lxxiii 164

[15] Flury and Groll Stoffwechseluntersuchungen an trichinosen Tieren Arch f exper Path u Pharmakol, 1913 lxxiii, 214

[16] Ahl and Schittenhelm Ueber experimentelle Eosinophilie parenteraler Zufuhr verschiedener Eiweisstoffe Ztschr f d ges. Med. 1913 i 3

[17] Schittenhelm Weichardt and Grisshammer Eiweissumsat Ueberemfindlichkeit Ztschr f exper Path u Therap 1912

[18] Schlecht Ueber experimentelle Eosinophilie nach pare Zufuhr artfremden Eiweisses und über Beziehungen der Eosi zur Anaphylaxie, Arch. f exp Path 1912 lxvii 137

[19] Schlecht and Schwenker Ueber die Beziehungen der Eosi zur Anaphylaxie, Deutsch Arch f klin Med. 1912 cviii 405

[20] Herrick W W Experimental E[illegible]philia with an Extr Animal Parasite, Arch. Int. Med F[illegible] 1913 p 165

[21] Schwartz Die Lehre von der a[illegible]nen und artliche phile Ergebn d allgemein Path 1914 xvii, 136

A further point of interest in the development of knowledge of this disease is the observation of Van Cott and Lintz,[22] who for the first time described the ng of trichinella embryos in the spinal fluid The ryos, obtained by ordinary lumbar puncture, were t in large numbers, and retained motility after e days in the ice chest Thus far this finding has not been confirmed by further similar reports In performing such puncture the greatest caution should be taken against introduction of trichinella embryos into the needle from tissue surrounding the spinal canal, or from punctured blood vessels If the embryo can penetrate the sarcolemma of the primitive muscle fiber, it is not at all improbable that it can traverse the two layers of endothelium separating the blood stream of the choroid plexus from the cerebrospinal spaces

For the future study of trichiniasis the points of greatest interest beyond the seemingly hopeless problem of therapy are the relation of bacteremia and the question of the presence of embryos in the spinal fluid Blood cultures and lumbar puncture with examination for embryos are suggested as routine procedures in the clinical study of this disease

49 East Fifty-Third Street.

REPORT OF CASES POINTING TO PURULENT INFECTION AS A CAUSATIVE FACTOR IN MUCOUS COLITIS

J W PRESTON, MD
ROANOKE, VA

In view of the multiplicity of causes to which mucous colitis is ascribed, and the lack of proof adduced in substantiating any of them, it may be questioned whether the chaotic mass of literature should be added to Since, however, it is a condition so intimately associated with the abnormal functioning of the autonomic nervous system, of which so little is known, and which from its very nature must be investigated largely from a clinical standpoint, I have thought it worth while to report the following cases, which seem to have a direct bearing

REPORT OF CASES

CASE 1—Mrs A S C, aged 50, came under observation complaining of general debility, tenderness over the abdomen, bloating, palpitation, persistent constipation, with the passage of scybala and characteristic mucus, all together presenting a definite picture of mucous colitis In addition she suffered from a pain of a neuralgic character through the distribution of the cervical nerves, and in the left frontal region Her history was unimportant, except a nervous breakdown at the age of 30, and severe neuralgic pains of the face and neck four years prior to being seen, which subsided until November, 1914, when they recurred, together with the foregoing symptoms, and had continued in varying degrees since Nothing could be elicited pointing to inflammation of any of the sinuses other than the pain complained of, she having no recollection of any discharge of pus or blood from the nose. Having in mind a paper by Dr Starr,[1] in which he details his observations to the effect that many cases of neuralgia, neurasthenia and allied nervous diseases are due to the absorption of poisons from the intestinal tract, the head pains were at first supposed to result from this source, and she was temporarily put on a treatment of laxatives and intestinal antiseptics, with no beneficial results In a search for a more direct cause of the neuritis, following the negative report of a competent dentist as to the source of infection existing among her teeth, she was referred to an oculist, who reported the occlusion of the left frontal sinus, as shown by transillumination He removed the left middle turbinate and released a quantity of foul-smelling pus, which not only resulted in the almost immediate improvement of the neuritis, which would of course have been expected, but also of the abdominal symptoms, as evidenced not only by the prompt diminution of the palpitation, bloating and mucus, but also the constipation She reported six weeks later that while there was still some discharge from the head, the bowel symptoms were practically cured, there was no mucus, and what was more surprising, that she had not found it necessary to take medicines for constipation for the past month

CASE 2—J L B, aged 40, foreman in a bridge works, requested treatment in April, 1915, on account of digestive disturbances and headaches He stated that two years previously, he had nasal polypi removed, and his health had since been good until October, 1914, when he first noticed mucus in his bowel movements, and about the same time began to suffer from bloating of the abdomen, and headaches These symptoms gradually grew worse, he became constipated, and unless he took laxatives regularly, his feces, which had previously been normal, were dry and lumpy, and always contained mucus His appetite was poor, and his food disagreed, he became nervous and irritable, and was unable to take an interest in his work He developed soreness and pain over his abdomen, and on account of bloating was compelled, much of the time, to wear his clothes unfastened These symptoms continued in varying degrees over a period of about three months, when the severe headaches, together with the findings as previously detailed, focused attention on his sinuses, and on referring him to a nose and throat man, it was found that there was a necrotic condition at the point from which the polypi had been removed, and further search disclosed inflammation of the ethmoid This was drained, and while the operation was complicated by a severe secondary hemorrhage, and healing was slow, without further medication all of the symptoms have gradually cleared up His digestive and nervous symptoms have disappeared, and he has not for some time required medicine for the relief of constipation He again takes a lively interest in his work and plans

CASE 3—A C T, aged 33, traveling salesman, was first seen Jan 13, 1914 He gave a history of fair general health, previous to four months before, when he began to suffer with vague pains throughout the abdomen, sleeplessness, a tendency to looseness of the bowels, alternating with constipation, and the passing of tenacious mucus, which was worse on dieting, soreness in the right iliac region, and over the splenic and hepatic flexures of the colon He had drifted from one physician to another, and a difference of opinion had existed among those consulted as to the advisability of an operation for appendicitis No organic disease could be made out, but it was noted that his teeth had been badly neglected, and that some of them showed abscesses As there was but little benefit from a month's treatment of the colitis, he was prevailed on to have the offending teeth extracted, which he had done in March He reported at the end of the second month that all of his symptoms were markedly improved, in spite of the fact that he had for a time experienced difficulty in masticating his food on account of soreness of the gums Later inquiry elicited the fact that his bowel movements were regular, without medicine, no bloating, discomfort, or mucus, his sleep good, and his general health normal

Craig[2] reports a case of arrhythmia associated with angina, cured by draining abscesses of the teeth, and also in the same article one of dizziness, cardiac symptoms, mental depression, and incidentally "slight evidence of catarrhal colitis," all of which cleared up promptly on the removal of a bridge and drainage of abscesses.

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[22] Van Cott, J M, and Lintz, William Trichinosis, THE JOURNAL A M A, Feb 28 1914, p 680

[1] Starr The Toxic Origin of Neurasthenia and Melancholia, Med Rec, New York, May 11, 1910

[2] Craig, C Burns Peridental Infection as a Causative Factor in Nervous D[illegible], THE JOURNAL A M A, Dec 5, 1914, p 2027

Since the causative relation of an infection to the syndrome of mucous colitis has suggested itself to me, I have been interested in reviewing my notes of cases treated previously to find that among them were two of fistula in ano, one of a purulent infection of the fallopian tubes, and one of a severe pyorrhea. Surgical and dental treatment was suggested in each of these, but not insisted on, as would have been done had it then occurred to me that the foci might be of etiologic importance. Each passed from observation but slightly improved. These cases, of course, prove nothing, but I believe are worthy of mention.

Rather than speculate as to what products may be absorbed from a purulent focus, or how they may throw the autonomic nervous system out of balance, one may with propriety call attention to some similar well-known, but little understood, conditions, notably the urticaria, with its complex of symptoms, observed in susceptible individuals on eating shellfish, the symptoms of anaphylaxis resulting in others from the ingestion of the albumin of an egg, the systemic effect of the presence of certain pollens in the hay-fever subject, and finally the effect of the subcutaneous introduction of even a minute quantity of a protein into the circulation.

Bearing in mind the intimate relation and influence of the secretions of the adrenal, thyroid, and pituitary glands on the functioning of the system under consideration, the findings of Rosenow[3] tending to show that goiter, particularly exophthalmic, with its kindred symptoms, is due to a direct infection, are worthy of note in this connection, but after all a sensitization resulting from the more or less constant absorption of toxins or other products would seem more probable.

215 South Jefferson Street.

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[3] Rosenow E. C. The Newer Bacteriology of Various Infections as Determined by Special Methods The Journal A. M. A. Sept. 12 1914 p 906

THE EFFECT OF TYPHOID VACCINATION ON THE WIDAL REACTION

C. D. HAMILTON, M.D.
SYKESVILLE, MD.

In 1896 Widal and Grünbaum, each working independently of the other, applied the principle of agglutination, as previously recognized by Gruber and Berdet, to the diagnosis of typhoid fever. Since then the Widal reaction, when present, has been considered by most clinicians as the last word in the diagnosis of this disease.

In 1908, however, when Major Frederick F. Russell first began using antityphoid vaccine in the United States Army, and the practitioners over this country gradually followed his lead, a new phase in the diagnosis of typhoid occurred. It was soon recognized by observers that a positive Widal reaction always followed a prophylactic dose of typhoid vaccine. The vaccine, however, had not been in use a sufficient time to ascertain the length of time this reaction persisted. While we now believe the presence of a positive Widal reaction is not necessary for immunity, but that the patient may still be immune after the reaction has ceased to exist, it is not our purpose to discuss this phase of the question here. However, the presence of the reaction is of the greatest importance if typhoid fever is suspected.

Since 1910 at the Springfield State Hospital, there have been 2,766 prophylactic doses of typhoid vaccine given and at intervals specimens of blood have been taken to ascertain the presence or absence of the Widal reaction. During the first eighteen months after the typhoid vaccination was adopted at this hospital each patient received three doses of the vaccine at intervals of one week. The first dose consisted of 125 million killed bacteria, in salt solution. The second dose consisted of 250 million and the third dose consisted of 500 million killed bacteria. At the end of eighteen months we adopted the dosage which we now use, namely, 250 million, 500 million and one billion killed bacteria, given at intervals of one week. The patients, however, who received the original smaller doses were not reinoculated, but their blood was examined with the rest. All of the specimens of forty-eight and fifty months belong to patients who received this smaller dose of the vaccine.

In making the Widal test we use an old strain of bacteria which are known to be easily agglutinable. These are transferred from the agar slants to bouillon and are used when from eighteen to twenty-four hours old. The blood of the patient is collected in capillary beads, allowed to stand for a few hours until the serum separates. This serum is then diluted 1:25 and an equal portion of it and the bouillon culture are mixed, thus making a dilution of 1:50. A hanging drop is then made in the usual manner and allowed to stand one hour, when it is examined and the result read. A control in which salt solution instead of serum is used is similarly prepared to guard against artificial clumping. Only the blood of patients who could give a clear history of never having had typhoid fever was examined. Blood was taken from patients at the end of one month, six months, twelve months, twenty-four months, thirty-six months and forty-eight months, respectively, with the following results:

One month. Ten specimens of blood all gave positive Widal reactions.

Six months. Ten specimens of blood all gave positive Widal reactions.

Twelve months. Ten specimens of blood all gave positive Widal reactions.

Twenty-four months. Ten specimens of blood gave seven positive and three negative Widal reactions.

Thirty-six months. Ten specimens of blood gave six positive and four negative Widal reactions.

Forty-eight months. Ten specimens of blood gave three positive and seven negative Widal reactions.

One patient inoculated fifty months ago still had a positive Widal reaction.

From the foregoing we would emphasize the fact, as already stated by Hirschbruch,[1] that a positive Widal reaction in any person who has ever been inoculated with the antityphoid vaccine is of no value in diagnosing typhoid fever. The only reliable way of ascertaining the cause of continued fever when typhoid is suspected is by the blood culture and a total and differential leukocyte count.

Springfield State Hospital.

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[1] Hirschbruch A. Agglutination After Vaccination Against Typhoid Deutsch. med. Wchnschr. April 29 1915

RADIUM IN THE TREATMENT OF CARCINOMAS OF THE CERVIX UTERI AND VAGINA*

HOWARD A KELLY, M D
AND
CURTIS F BURNAM, M D
BALTIMORE

The scope of this paper has been intentionally limited to a consideration of the value of radium in treating the malignant epithelial new growths of the vagina and cervix uteri Equally interesting technical problems and clinical phenomena are met when radium is used in treating other kinds of malignant tumors, for example the sarcomas and carcinomas, and tumors in other organs, as the bladder, breast, tongue, etc The technic, the indications for treatment and results obtained vary with the type of tumor and its location so greatly that each demands separate consideration It is especially difficult to have to exclude the adenocarcinoma of the fundus uteri, as it is quite radiosensitive and as we have of it the most excellent material, both clinical and anatomic The problems connected with its surgical as well as radium treatment, however, differ widely from those of the cervical—uterine and vaginal — cancers

Absolute valuation of a therapeutic agent is obtainable only after all methods of using it have been tried out on carefully selected and classified cases over a period of years Our knowledge of the curative action of radium on cancers of the uterine cervix and vagina is as yet in its infancy, nevertheless, its ultimate possibilities, viewed in the light of present experience, seem very great That it does greatly increase the percentage of the curable cases of these cancers and correspondingly diminishes the percentage of the incurable is already evident and demonstrable

So far as is known, untreated cancers of the cervix uteri and vagina do not heal spontaneously and do inevitably lead to painful death after a period of suffering varying from a few months to several years

The continuous and painstaking work and investigations of many surgeons and pathologists through a period of more than two decades have firmly established the accepted surgical technics with their proved five year cures During this time there has been accumulated an immense store of information regarding the occurrence, the etiologic importance of trauma, the histopathology, the avenues of extension, the rate of growth and the complications of these malignant, epithelial new growths

The Wertheim radical hysterectomy, in our opinion, yields a higher percentage of permanent cure in cancer of the uterine cervix than does any other operative procedure It affords, however, much less help in the treatment of primary cancer of the vagina

Nothing is more misleading than a gross statistical statement of so many patients operated on, such a primary mortality and so many permanent cures The operator who takes only the early and moderately advanced cases has a lower primary mortality and a higher permanent cure rate than does the one who treats many of the border-line operable type Where a professional and public educational campaign against the disease has been carried out, as in Vienna, the proportion of easily operable cases is much larger than where such advanced methods have not been followed Great need exists for reports on carefully classified groups of cases, and not only the extent of the growth but also its histologic type should be taken into account in the group separations

A statistical report by Howard A Kelly and J Craig Neel of the cases of uterine cervix cancer seen at the Johns Hopkins Hospital up to August, 1913, shows 57 per cent operable, 11 per cent primary mortality and 25 per cent permanent cure It is of interest that only one case of adenocarcinoma remained free from recurrence for two years after the operation Wertheim[1] states that 50 per cent of his cases are operable, and that 50 per cent of those patients operated on remain well Kronig[2] states that not more than 20 per cent of the cervix cancers are permanently cured by operation and less than 5 per cent of the primary vaginal cancers

The present report is based on a series of 213 cases of cancer of the uterine cervix and vagina treated with radium at the Howard A Kelly Hospital, between Jan 1, 1909, and Jan 1, 1915 Although one of the cures dates from 1909, it was not until December, 1912, that we secured sufficient radium and developed sufficient enthusiasm to employ it systematically, and indeed only in the last eighteen months have the patients in the operable class been invariably radiated as well as operated on Of the 213 cases, fourteen were operable and 199 inoperable or inoperable recurrent cancers We have refused treatment to no inoperable case that has come to the hospital, although we have discouraged the coming of patients with evident general carcinomatosis Before passing to a detailed analysis of these cases and the results obtained by treatment, it seems necessary to discuss very briefly some questions of technic, of histologic change (in radiated tissue) and of theory as to the mechanism of the action of the rays on tissues both normal and pathologic

It would be most profitable here to digress into a most fascinating field of human knowledge, but time does not permit even a bare outlining of the physical properties of radium Suffice it to say that radium is obtainable in stable form as a bromid, chlorid or sulphate, and that by appropriate means radium emanation, a gas, can be separated from the radium salts

In order to carry out such a radium radiation, as the cases under consideration require, it is necessary to have applicators which hold either dry radium salts or the emanation of radium The emanation has a great advantage in that it is possible to vary the size, shape and strength of the applicator at will and for each case, it requires, however, considerable skill in glass blowing and in mercury vacuum-pump manipulation

Figure 1 shows a few applicators, the millimeter rule permits an easy estimation of size The small tube between the needles is a glass capillary in which any amount of emanation between a fraction of a millicurie and a curie (equal to a gram of radium) can be placed This can be inclosed in a metal container of its own shape and length, or it may be placed in the outer end of one of the record syringe hypodermic needles, shown on either side of it Immediately to the right of the needle is an applicator containing 100 mg of pure radium chlorid in a glass tube encased in a thin platinum envelope 0 4 mm thick, and all covered by a small rubber cot about 3 mm thick Still further to the right is shown the platinum envelope necessary to hold 100 mg of pure radium chlorid The last figure to the right shows a small flat applicator These can readily be made an inch or two in diameter, and will hold immense or small amounts of emanation as desired Through the glass container are emitted from the radium two kinds of rays the beta and the gamma

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty Sixth [illegible] Session of the American Medical Association, San Francisc[illegible] 1915

[1] Wertheim Strahlentherap , iii, 537

[2] K[illegible] Strahlentherap , iii 28

The beta ray is particulate matter, a negatively charged ion, deflectable by an electromagnet, entirely absorbed by 3 mm of lead, or 2 cm of tissue Occurring in ten times the quantity of the gamma rays, it produces much more marked destructive biologic effects

The gamma ray is a vibration of ether of extremely short wave length It is comparable to ordinary light and the Roentgen ray It is extremely penetrating, passing through inches of lead or feet of tissue

When tested by the heavy metals, such as lead, platinum, etc, both the beta and the gamma rays vary as to penetration There are soft, medium and hard rays of each class, however, according to Keetman and Mayer, the absorption of these rays in tissue is as if they were uniform, that is, for a given thickness of tissue there is an equal percentage of absorption of the rays going through it The work of Keetman and Mayer carried out with mesothorium is being repeated with radium in our physical laboratory, but is not yet finished According to them, 8 per cent of the beta rays are absorbed by each one-tenth millimeter of tissue and 5 per cent of the gamma rays by each centimeter of tissue Beta and gamma rays can be used together or the gamma ray can be used alone by placing a 2 cm lead screen or a 1 mm platinum screen between the radium and the part treated

Thickness of Tissue Traversed cm	Absorption of Tissue per Cent	Radiation Transmitted per Cent	Dispersion Correction	Intensity of Radiation per sq mm	Amount of Radium Unit to Give One mg
0	0	100	0	1	2,500
1	5	95	0 605	0 66	3 788
2	9 75	90 25	0.51	0 464	5 410
3	14 3	85 7	0.39	0.335	7 463
4	18 6	81 4	0 31	0.251	9,950
5	22.17	77.83	0.25	0 194	12,880
6	26 06	73 94	0 207	0 153	16 310
7	29 76	70 24	0 174	0 122	20 490
8	33.3	66 7	0 147	0 098	25,500
9	36.7	63.3	0.128	0 081	30,800
10	40	60	0 11	0 066	37,500

In addition to absorption in tissue, another most important factor in determining the intensity of radiation, on any surface, from a uniform source, is the distance from the source, for the intensity as in all spherical dispersion varies inversely with the square of the distance If, for example, we place 1 mg of radium 1 mm distant from a 1 mm square surface and then extend the distance to an inch or 25 mm, the intensity at 1 mm distance is 625 times that at the distance of 1 inch, as can be readily calculated

Taking the 1 mg at 1 mm in one second on 1 square mm of surface, as the unit of dosage, and taking in the factors of spherical dispersion and tissue absorption, the table inserted above shows the effects at various depths and the quantity of radium which is necessary to produce a unit dose in one second when the applicator is placed 5 cm away [illegible] surface

A factor not considered in the table but of the highest importance, is that, within certain limits, increasing the duration of the application correspondingly diminishes the amount of radium required to produce the unit energy for example, a unit dose at a depth of 5 cm can be secured with 1 gm radium in 12 88 seconds, or with 200 mg of radium in a little more than a minute

Figure 2 shows graphically the changes in intensity of gamma radiation at different depths in the tissue

It is evident that when beta radiation is needed in the depths, it can be secured by placing the emanation-containing needles at equal distances, never greater than 1 cm from each other, throughout the entire area to be radiated When gamma radiation alone is used, it should be borne in mind that the greater the distance the radium is placed from the surface, the greater the relative penetration secured in the depths The ideal radiation is a homogeneous and equal one throughout the entire affected volume

Consideration of the above facts makes it clear why to do extensive work adequate amounts of radium are necessary, and why the statements of so many milligram hours with such and such filters mean little or nothing unless the distance worked at is clearly stated It is also, we think, evident that each case must be individualized and appropriate radiation given In cancers along the vaginal wall, especially on the rectal side, it is of advantage to have flat applicators and to get within a few millimeters of the vaginal surface, as in this way the infected vagina gets a maximum and the rectum a minimum radiation In radiating the regional lymphatic glands or upper parametrium, a number of portals should be used from the abdomen, back, vagina and perineum, at distances varying from 2 to 5 inches from the surface Figures 3 and 4 show schematically the common locations and distances of the cervical and vaginal cancers from the body surface We propose in a separate communication to deal exhaustively with the technic of radiation and will not go into further detail here

Excellent descriptions of the histopathologic changes found in the cancerous uterine cervix after intense radium radiation can be found in the reports of Hansemann[3] and Haendly[4]

Beginning a week after radiation there is swelling of the cell protoplasm, hyperchromatosis and pyknosis of the nuclei After five or six weeks, the cancer cells are entirely gone, the connective tissue and blood vessels show hyaline changes There may be a marked infiltration with polymorphonuclear leukocytes, and often giant cells are present At a later stage this necrotic and inflammatory tissue is replaced by ordinary connective tissue When radium is placed directly within the cervix and left sufficiently long, changes of this type invariably occur

We have eight uteri removed a sufficient time after radiation to study the changes in the tissues Vestiges of cancer have been demonstrated in only three of these All will be serially sectioned and reported on in detail in a later communication All were from patients with cancers originally inoperable

It should be borne in mind that the intense inflammatory changes described above follow overradiation and are due to imperfect technic. The action of the rays is not in a true sense specific, normal tissues as

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Hansemann Berl. klin Wchnschr 1914 No 23 p 1064

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Our view of the action of radium is that, to markedly varying degrees, it injures all tissues, and that the injury is some kind of intracellular chemical change It seems to us improbable, however, that the disappearance of cancer cells without any demonstrable effect on normal cells can be due solely to a difference in resistance of the cells to radiation The common observation that in two cases with the same type of growth, subjected to the same radiation, different results are obtained, that in one the cancer disappears promptly and in the other is not affected at all, suggests the importance of resistance in the patient It also opens up a wide field for speculation and experimental investigation as to what this resistance may be, where it is located, how it may be artificially produced, etc

Radiation carried to the extent of severe injury of normal tissue may defeat its own ends We have observed in one specimen of uterine cancer and several specimens from other parts of the body a condition which needs interpretation In the cervix cancer the facts are as follows The patient came in with solidly fixed parametria, intense intracervical radiation was given with the result that the uterus became freely movable, after six weeks hysterectomy was performed Microscopic study showed from within outward, (1) a zone of necrosis, (2) a zone of greatly modified connective tissue, blood vessels and altered cancer cells, (3) a zone of normal connective tissue and no cancer cells

In every patient treated, a radiation up to but not beyond this toleration of the normal tissues should be given so as to take in all the infected area, including the parametria and regional lymphatic territory This radiation should be made as homogeneous as possible, bearing in mind the underlying physical principles already mentioned

The most easily injured normal tissue in connection with cervical and vaginal cancer radiation is the rectum In our earlier cases, when we were less familiar with our agent and totally unacquainted with the tissue reactions, this complication was not uncommon and in some cases led to such serious results as ulceration, fistula formation and even death from infection Such a complication manifests itself first in from ten days to two weeks after the application, by diarrhea and tenesmus In the mild types this may disappear in two weeks and no further trouble develop In the severer grades the proctitis lasts two months or more, then disappears to recur about the beginning of the sixth or seventh month, with ulceration in the anterior rectal wall This condition is very painful and takes from three to five months to heal In the worst cases actual fistula formation takes place before healing *We are happy to state that this complication can be avoided in every case* We have not seen it for months

The first radiation should be given in a single dose, following which a pause of at least five or six weeks is necessary before a second treatment is given During this time the patient should be examined once a week Some carcinomas, especially the basal celled of the vaginal wall, begin diminishing in a few days and disappear in as short a period as two weeks after the treatment Most of them begin the decrease at the end of two weeks and continue diminishing for five or six weeks If at the end of six weeks the growth has disappeared, another four weeks should pass before a second treatment is given After the second treatment practically all cases in which there will be recovery will show complete disappearance of the growth In view of the fact that we have seen a number of recurrences developing several months after apparent complete disappearance of the growth, we believe that the radiation should be repeated every few months for a year or two Some of our permanent successes have been, however, secured from a single radiation

As a rule, the general symptoms which follow a radiation are mild nausea for twenty-four hours and a sense of weakness for four or five days Sometimes there are no disagreeable symptoms at all, and in no case has there been any alarming developments The patients are rarely kept in the hospital longer than the day of treatment

Every patient before treatment is most thoroughly investigated both from the local and general standpoints, and invariably tissue is secured for microscopic study The application of the radium sometimes made under nitrous oxid is more frequently made without anesthesia

Up to the present time we have not found means of determining prior to radiation what its effect will be The general strength of the patient is not of prime importance We have seen local disappearances in patients in the last stages of general carcinomatosis Nor is the extent of local involvement of importance, large growths may disappear and small ones fail to do so The histologic type is likewise relatively unimportant in this connection, in the cured list are twenty-nine squamous-celled epitheliomas, seventeen basal-celled epitheliomas and seven adenocarcinomas In passing, we desire to state that squamous-celled epitheliomas may long remain local, and that some basal-celled epitheliomas rapidly metastasize Among the recurrent cases, it has been noted that those which develop late, two years or more after operation, almost always do well, the cause most likely is connected with immunity factors in the patient

CLASSIFICATION AND DEFINITION

We have divided our cases into three groups 1, operable, 2, inoperable, 3, recurrent inoperable The results obtained have also been placed in three classes 1*a*, clinically cured, 2*a*, improved, 3*a*, unimproved

1 By operable cancers are meant those still confined to the cervix or only moderately involving the parametria and vaginal walls They are not fixed to

the pelvic wall on either side and have not caused hydronephrosis and are not associated with pelvic pain

2 By inoperable cancers are meant those associated with general metastasis, those firmly fixed to one or both pelvic walls, those extensively involving the bladder, vagina or rectum In short, cases in which we have never cured the patients by operation

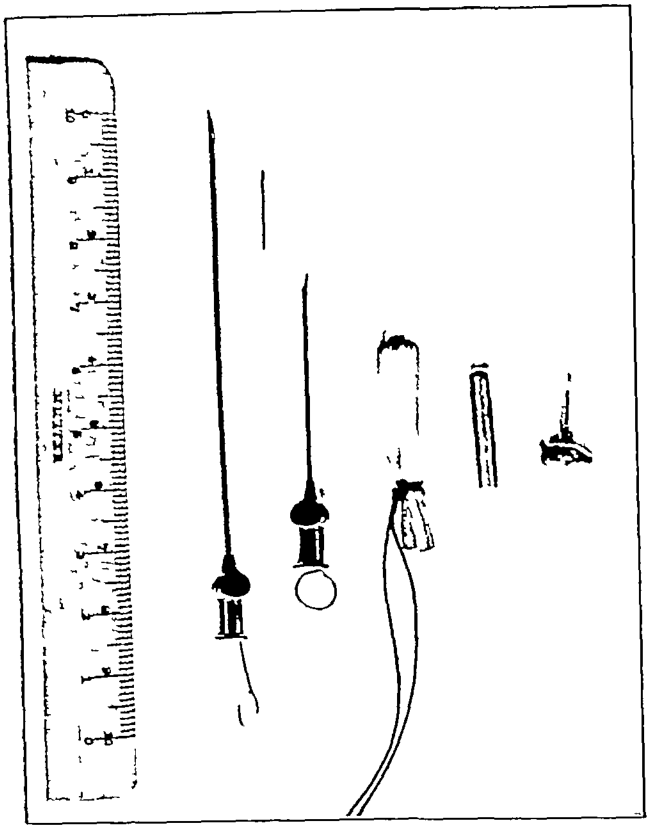

Fig 1 —Radium applicators and scale indicating size.

3 By recurrent inoperable cancers are meant such recurrences following operation as we have never cured except by radium

1*a* By clinically cured is meant the complete disappearance of the cancer so far as palpation, curettage or other method may disclose associated with the apparent perfect general health of the patient

2*a* By improved is meant a definite betterment of the patient's condition In the lesser degrees this may consist of a cessation of hemorrhage and discharge, or a disappearance of pain which has resisted all the drugs, including morphin Among these, too, are placed twelve cases in which all local trouble disappeared, but the patient showed metastasis at the time of treatment or developed it subsequently Two of these patients were found locally free of cancer at necropsy, and in two, in whom hysterectomy was carried out after apparent clinical cure, the uteri are clear of the disease, in spite of the fact that both patients are now dead from general metastasis In most of the cases of this group the reduction in the size of the tumor was marked It also includes some early cases in which the treatment was very imperfect

3*a* By unimproved is meant no material benefit having been produced Most of these showed histologic improvement on microscopic examination of curettings In more than two thirds of them the disease was immense and the general condition of patients bad

All of the patients included in this report were treated prior to January, 1915, and the cured ones were apparently cured at that time All of the cured have been investigated by one or both of us personally, with a few exceptions in which the examinations were made by competent men The last report on each case was obtained in May, 1915

RESULTS

The results obtained by the treatments may be summarized as follows

Out of the 213 cases treated, 14 were operable and 199 inoperable

Operable Cases—Of the 14 operable cases, 10 patients were operated on and treated prophylactically with radium Of these, 2 have been well for more than three years, 1 for more than two years, 4 for more than a year, and 3 for more than six months The number is too small to draw conclusions from, and yet is suggestive, when we consider that in 75 per cent of all cases with operation there is recurrence and that 60 per cent of these recurrences take place within one year following the operation

In four cases of the operable group, on account of some general contraindication to operation, radium alone was used All of this group are living and well, 2 for over three years and 2 for over one year

Inoperable Cases—The total number of inoperable and inoperable recurrent cases is 199, of which 53 patients have been clinically cured, 109 markedly improved and 37 not improved

Our series includes 35 cases of originally inoperable cancer of the cervix uteri or vagina in which the patients are clinically cured, in 2 cases for over four years, in 2 cases for over three years, in 4 cases for over two years, in 17 cases for over one year, in 10 cases for over six months It also includes 18 cases of originally inoperable recurrent cancers in which the patients are now clinically cured, in 1 case for over six years, in 1 case for over four years, in 11 cases for over two years, in 10 cases for over one year, in 5 cases for over six months

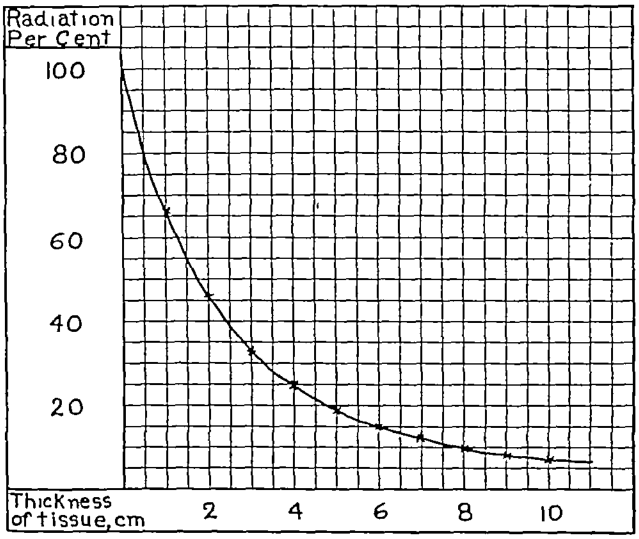

Fig 2 —Curve showing the variation of the intensity of gamma radiation with the thickness of tissue

Excluding the operable cases, in which we have both operated and used radium, there are 203 cases left, in well as pathologic are injured and can be easily destroyed There are wide variations in the resistance to radiation in different normal tissues The vaginal wall and cervix are very resistant, enormously more so than skin Bumm of Berlin gave currency to a widely accepted dictum that the limit of the gamma-ay efficiency (in tissue) was 4 cm It is probably e that it is not possible to place radium directly the cervix and radiate sufficiently to destroy the cancer cells beyond 4 cm without causing severe local destruction of normal tissues, but it is possible to radiate from almost any distance by proper disposal of the applicators In one case we cleared up an extensive vaginal cancer by radiation through the vulva, the radium being placed 10 cm from the surface of the vulva In another patient who did not recover, but died of general cancer, we saw large metastatic deposits disappear from the iliac lymphatic glands—the patient was thin and the masses easily outlined

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THE ACTION OF RADIUM ON CANCERS OF THE PELVIC ORGANS

A CLINICAL AND HISTOLOGIC STUDY *

HENRY SCHMITZ, M D
CHICAGO

Since April, 1914, I have treated 112 cases of malignant growths of various regions of the body with radium Forty-eight of these occurred in pelvic organs Forty-one of these pelvic cancers are considered in this paper Thirty-six were in the uterus, five in the rectum and three in the bladder The tumors were inoperable, recurrent or operable carcinomas Twenty-four were inoperable, nine recurrent and eight operable

Ten of the inoperable and three of the recurrent carcinomas were thoroughly cauterized or excochleated and then cauterized preceding the application of radium Broken-down tissue and debris were thereby as completely removed as possible, and the extent of the intensity of the gamma rays into the depths of the tissues correspondingly increased The operable cases were subjected to an extensive vaginal cauterization and an abdominal panhysterectomy As soon as the patient recovered from the operation, radium was inserted into the crater of the broad ligament The rays were used as a prophylactic to recurrence

I wish to draw attention to the remarkable deodorizing and purifying action of radium Those who have attended patients after such abdominal panhysterectomies well remember the sloughing of tissues in the crater of the broad ligament, which gives rise to a terrific putrid odor and discharge and an irregular temperature One, or at the most two applications of radium stop these distressing complications The cauterizations always were performed with ordinary soldering irons at red heat

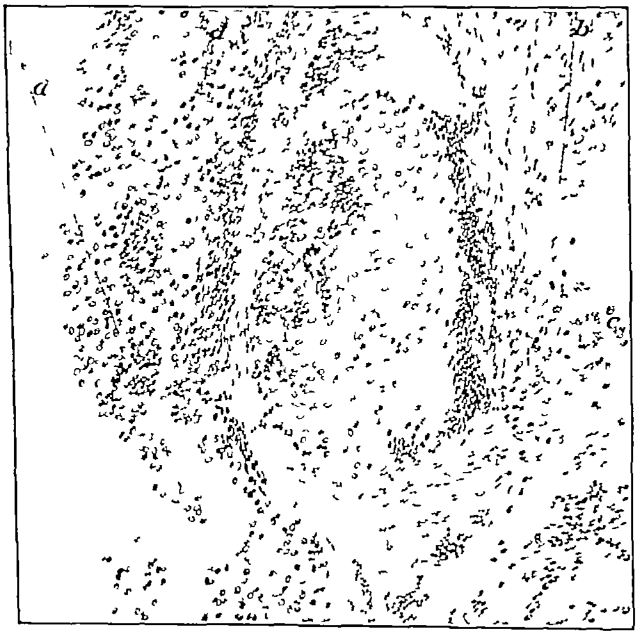

Fig 1 (Case 33) —Carcinoma portio vaginalis cervix uteri Low power reproduction of tissue removed Feb. 6 1915 at beginning of treatment *a* squamous cell carcinoma *b* connective tissue *c* lymphocytic infiltration *d* area reproduced in Figure 2

THE TECHNIC

The technic of applying the radium varied as to the limiting of time of the applications and the kind of metal filters used, but not in the amount of milligrams of radium element applied (uniformly 50 mg)

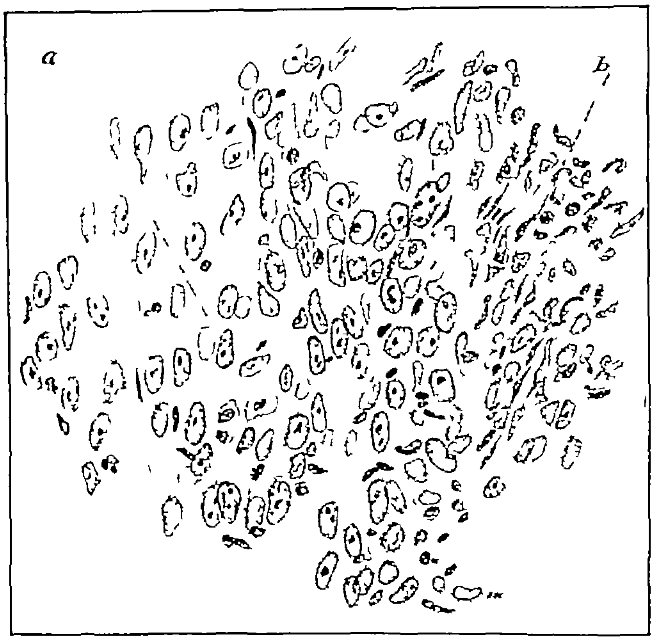

Fig 2 (Case 33) —High power magnification of Area *d* in Figure 1 *a* carcinoma cells *b* connective tissue

In the beginning of my radium work, the duration of each application was from ten to twelve hours, occasionally twenty-four hours The interval between the treatments varied from seventy-two to ninety-six hours These applications were continued until a decided improvement occurred in the subjective as well as the objective condition of the patient This usually took place after a dosage of from 3,000 to 4,000 milligram hours had been reached The treatments were then given weekly and finally biweekly, until the condition of the patient warranted a cessation of the treatments Frequent examinations were insisted on to keep the patient under control A total dosage of from 8,000 to 10,000 or more milligram hours was thus recorded

Fourteen patients were treated in this manner (Cases 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18) A subjective improvement was usually noticed after the third application The pain decreased, the profuse purulent, creamy discharge became scanty and serous, and the hemorrhage ceased The general state of health improved correspondingly After about 3,000 milligram hours of radium element had been given (that is, after from about twenty-one to twenty-four days, the bimanual findings became usually normal In a few cases such a state was not reached until about 6,000 milligram hours had been applied The uteri which were firmly fixed at the first examination became freely movable and could be plainly outlined The adnexa were palpable and the crater in the cervix was covered with healthy granulations, being protected by a grayish or whitish membrane The parametriums also were free of any indurating bands In other words, by cautious procedures and careful obser vation, we established the fact that on an average from 3,000 to 4,000 milligram hours of radium element were necessary to attain an apparently objective cure

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* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Sixty Sixth Annual Session of the American Medical Association San Francisco June 1915

This knowledge led to the second mode of treatment, which I may term the "intensive method" Just as maximum dosage of Roentgen rays may be concentrated into the possibly shortest space of time, so the milligrammage of radium element might be given within the shortest limit of time, and from 3,000 to 4,000 milligram hours of radium element were applied within from sixty to eighty consecutive hours

Ten cases in particular (Cases 1, 3, 4, 14, 20, 23, 25, 26, 27 and 28) were thus treated Although we obtained the same primary results as with the first method, we, however, noted the following points

1 The apparently objective cure was not reached any sooner than with the first method

2 The associated symptoms were exceedingly stormy and much severer They consisted, chiefly, in a marked loss of weight, strength and appetite, with hyperpyrexia, obstinate vomiting, profuse diarrheal stools and obstinate dysuria Although these symptoms were only transitory, lasting from eight to ten days, the patient suffered much, a condition which we rarely observed in the cases treated by the first or "intermittent method" If such manifestations did occur in this method, they were very mild and of very short duration, lasting usually a day or two

3 Destruction, ulceration or necrosis of the tissues was of regular occurrence Repair of these defects was slow Fistula formation, vesicovaginal, rectovaginal or even intestinovaginal, occurred in ten cases However, I wish to state that fistula formation existing at the time of the beginning or taking place during the first few days of the course of the treatment must be ascribed to the extensive cauterization The damaging action of the radium rays is a contributing cause (Cases 1, 4, 6, 15, 20, 26, 29 and 46), while fistula formation occurring from three to four weeks after the beginning of the radium applications must be directly attributable to the destructive action of radium, and extensive invasion of the bladder or bowel with cancer forms the predisposing cause (Cases 2, 8 and 33)

Finally, the following plan of treatment was adopted and carried out in the rest of the cases

A course consists of from six to eight séances of from ten to twelve hours each, with an interval of from thirty-six to sixty hours This course is followed by an intermission of three weeks If a bimanual examination made at this time reveals an apparent cure, two or

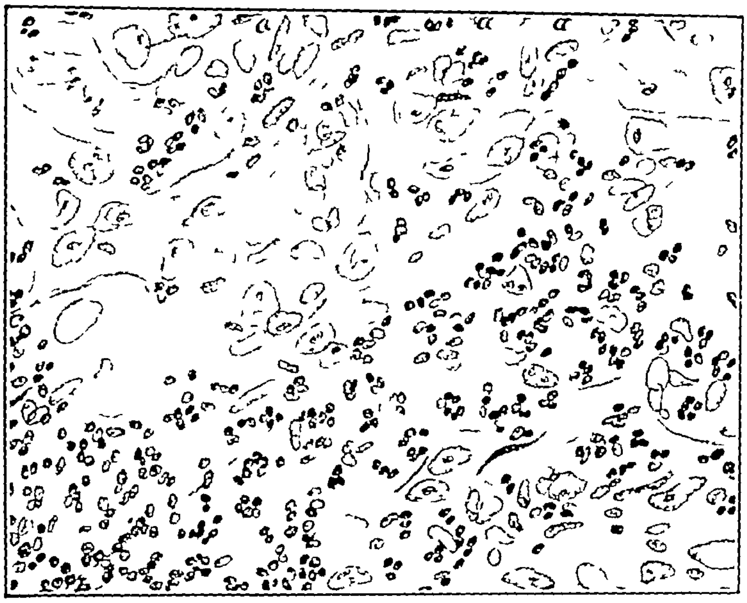

Fig 3 (Case 33) —High power magnification of tissue removed Feb 18, 1915, after 2,400 milligram hours of radium element had been applied from Feb 6 to 8, 1915 *a* enlarged carcinoma cells, *b*, lymphocytic infiltration, *c*, note connective tissue fibers surrounding groups of carcinoma cells

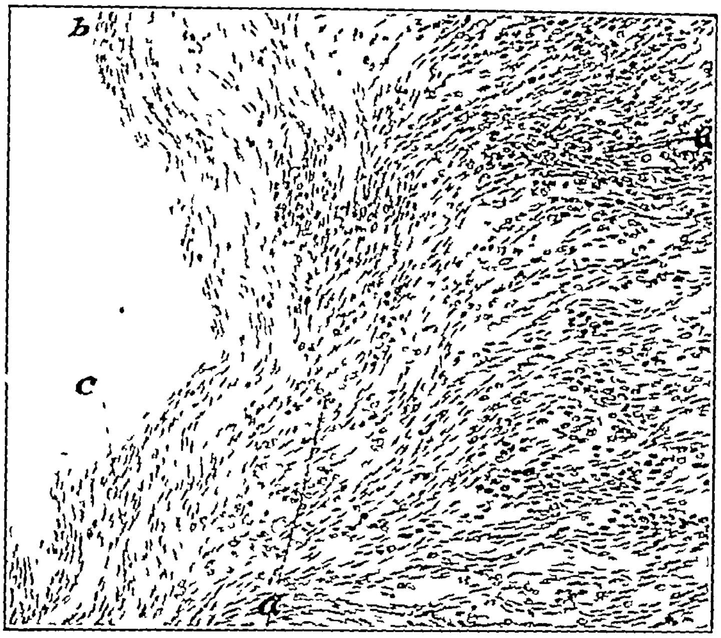

Fig 4 (Case 33) —Low power magnification of a section of tissue removed Feb 28, 1915, after 4 800 milligram hours of radium element had been applied from Feb 6 to 8 and Feb 18 to 20, 1915 *a*, carcinoma cells, *b* connective tissue cells, *c*, area reproduced in Figure 5 under high power

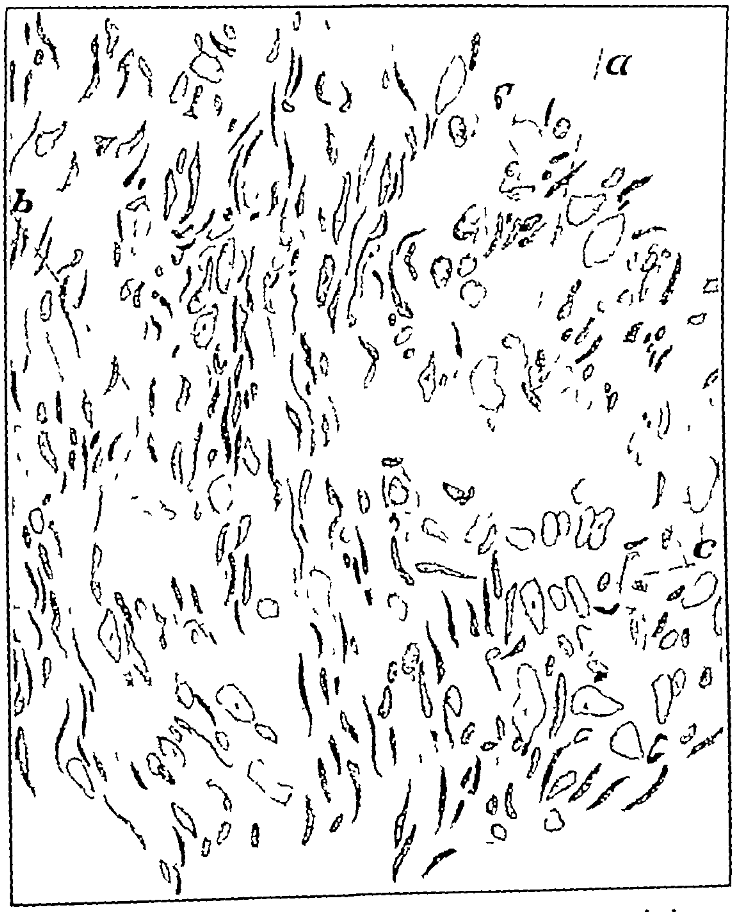

Fig 5 (Case 33) —High power magnification of area marked *c* in Figure 4 *a*, area of necrobiotic tissue, *b*, area of connective tissue, *c*, cytolytic carcinoma cell

three applications of from 500 to 600 milligram hours of radium element are given every second or third day. Another interval of three weeks is allowed, and if the examination then reveals a normal condition, the treatment is considered terminated. Negative findings, of course, are followed by another course of from 3,000 to 4,000 milligram hours. This “interval method” gave the best subjective and objective results with a minimum of concomitant symptoms, so that I consider it the method of choice.

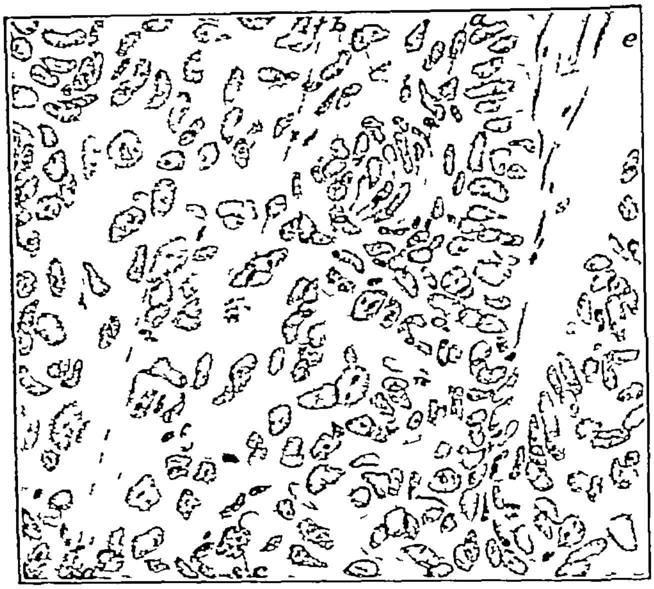

Fig. 6 (Case 39).—High power reproduction of cervical tissue removed March 16, 1915: *a*, nest of carcinoma cells; *b*, karyolysis of nuclei; *c*, granulation of protoplasm; *d*, vacuolation of protoplasm; *e*, connective tissue.

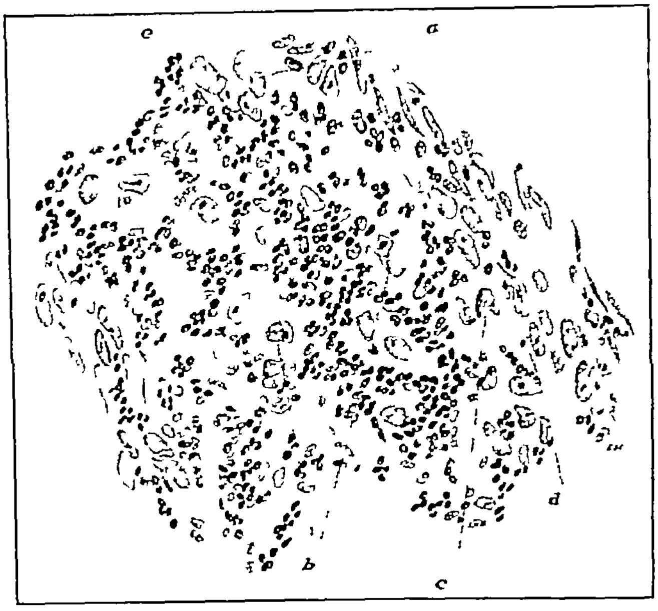

Fig. 7 (Case 39).—High power magnification of tissue removed from center of cervix March 28, 1915, after 1,600 milligram hours of radium element had been applied from March 20 to 26, 1915: *a*, degeneration of nuclei; *b*, granulation of protoplasm; *c*, degenerating carcinoma cell; *d*, mitosis of cell; *e*, lymphocytes.

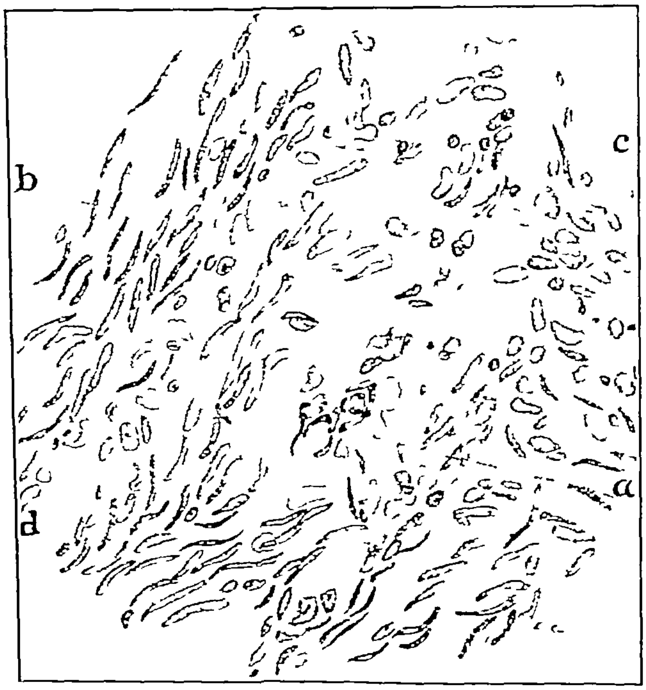

Fig. 8 (Case 39).—High power magnification of tissue removed April 7, 1915, after 3,700 milligram hours of radium element had been applied from March 20 to April 4, 1914: *a*, macrophagia-connective tissue cells; *b*, connective tissue cells; *c*, necrobiotic carcinoma cell; *d*, vacuolation of protoplasm.

Lead filters of 1, 2 and 3 mm thickness were used in my first work. A 1 mm. filter was deemed sufficient for intra-uterine applications, while the heavier filters were employed in vaginal, rectal and vesical cases. Following the advice of Adler, Werner and others, I soon replaced the lead with brass filters of from 1 to 1.5 mm thickness. Whether or not the lead filters cause severer latent destructions of tissue than brass filters I am unable to prove. Such disturbances occurred either in very advanced cases of carcinoma, with breaking down uterine or vaginal walls, or in extensively cauterized tumors, as mentioned before. The secondary rays produced in the metal fibers were arrested by surrounding the filter with a cot made of pure Para rubber of a thickness of from 1 to 3 mm. The healthy vaginal walls were protected by snugly packing the vaginal canal with gauze, Para rubber or lead plates surrounded by rubber and gauze.

CLINICAL RESULTS

Tables 2 to 5 show at a glance the results of the radium treatment. The amount of the milligram hours of radium element used, and beginning and duration of the treatment and the present condition are enumerated for each case. Of the ten cases of Table 2, one case was refractory, and nine cases evidenced a subjective and an objective improvement. Objective improvement indicates negative findings on bimanual palpation. Five of this group have succumbed to the disease. One has remained well since April, 1914, one since October, 1914, and one since January, 1915. Two cases, 39 and 40, are of too recent date to permit an expression as to the remote results. The primary results in these cases, however, are very good. Three of these patients (Cases 12, 16 and 18) were subsequently subjected to an abdominal panhysterectomy.

Fourteen inoperable cases, enumerated in Table 3, were treated only with radium. They were far advanced or extremely cachectic cases or had constitutional manifestations contraindicating even a cauterization Ten have died or are slowly succumbing to the disease Four are free of all objective and subjective symptoms They, and three cases not yet listed, were treated only recently, and considering the poor results obtained in the other ten cases, I must withhold a final opinion One case (Case 14) had, after the completion of radium treatment, a panhysterectomy

Of the nine recurrent carcinomas, listed in Table 4, five show an entirely refractory behavior toward the radium rays Four revealed a subjective and three also an objective improvement One of the latter patients died eight months *after the beginning of the* treatment from an intercurrent disease She had had a recurrence the size of a pea, which disappeared after

TABLE 1—CANCERS OF PELVIC ORGANS TREATED WITH RADIUM

Case No	Name of Patients	Hospital Number		Age, Yrs	Date of Adm	Uterine	Rectal	Vesical	Milligram Hours Radium Element	Operable	Recurrent	Inoperable		Remarks
												Cauterized	Not Cauterized	
1	Mrs B	Augustana	41218	51	9/24/14	+			4,200	+				
2	Mrs H	Augustana	40098	49	5/22/14	+			9,525				+	Cauterization 11/3/14
3	Mrs H	Augustana	40717	61	7/23/14	+			10 350		+			Op four years ago
4	Mrs R	Augustana	40944	39	8/25/14	+			6 775	+				
5	Mrs D	Augustana	39516	32	3/23/14		+		9 000				+	
6	Mr I	Augustana	40405	74	6/29/14			+	3,150	+				
7	Mr J	St Mary's	25176	57	6/30/14		+		2 175	+				
8	Mrs K	St Mary's	24058	38	3/13/14	+			5 700		+			Cauterization 9/16/13
9	Mrs K	Augustana	39778	66	4/22/14	+			6 820			+		
10	Mrs McQu	Augustana	39516	29	3/23/14	+			3,375		+			
11	Mrs McC	St Mary's	24096	47	3/17/14	+			7,500			+		
12	Mrs M	St Mary's	23957	52	3/ 7/14	+			7 875			+		Became operable
13	Mrs P	Augustana	40270	63	6/11/14	+			2,575		+			
14	Mrs R	Augustana	40202	43	6/ 4/14	+			9 250				+	Became operable
15	Mrs C S	Willard Hosp		52	4/ 4/14	+			8 312				+	Carc corp uteri
16	Mrs Th	Augustana	39321	53	3/ 4/14	+			9 043			+		Became operable
17	Mrs V	Augustana	39755	64	4/19/14	+			8,525	+				Also cauterization
18	Mrs W	Augustana	39469	35	3/10/14	+			8,700			+		Became operable
19	Mrs W	Augustana	40568	48	7/14/14	+			3 750				+	
20	Mrs P	Augustana	40456	45	7/ 4/14	+			3 500		+			
21	Mrs J	Augustana	40349	26	6/22/14		+		1 125				+	
22	Mrs R	Augustana	41305	32	10/ 7/14	+			4 000			+		
23	Mrs Sk	Augustana	41221	53	9/25/14	+			6,800			+		
24	Mrs B	Washington Bvd	8968	52	10/17/14	+			4,150	+				Carc corp uteri
25	Miss Ro	Washington Bvd	8902	53	10/ 1/14	+			8,875				+	
26	Mrs H	Augustana	41612	52	11/21/14	+			2 300		+			Cauterized 11/22/14
27	Mrs M	West Side	28985	48	11/27/14	+			4 150				+	Sarcomatous myoma ?
28	Mr St	St Mary's	26857	52	12/29/14			+	3 600				+	
29	Mrs T	Augustana	41944	49	1/ 5/15	+			3 500			+		
30	Mr To	St Mary's	27096	58	1/23/15			+	2 400				+	
31	Mr A M	Willard		52	2/10/15		+		4,500				+	
32	Mrs M	Augustana	42319	42	2/15/15	+			5 175		+			
33	Mrs H	Post Graduate		43	2/ 6/15	+			4,800				+	Colored
34	Mrs H	St Mary's	27533	33	3/ 3/15	+			2,800		+			
35	Mrs C	St Mary's	27590	52	3/ 9/15	+			3,900		+			
36	Mrs L	Augustana	42538	60	3/ 9/15	+			2,925			+		
37	Mrs W	Norwegian Deaconess		63	3/ 7/15	+			1,700				+	
38	Mrs J	St Mary's	27560	36	3/ 5/15	+			2,550	+				
39	Mrs Sl	St Mary's	27649	65	3/15/15	+			3 700			+		
40	Mrs DeR	St Mary's	27978	56	4/14/15	+			5 650			+		
41	Mrs St A	St Mary's	27982	49	4/15/15	+			3,950	+				

TABLE 2—INOPERABLE CANCERS TREATED WITH CAUTERIZATION AND RADIUM

Case Number	Cause of Inoperability	Date of Cauterization	Total Mg Hrs of Radium Element Applied	Duration of Treatment	Primary Results			Further Treatment	Results and Present Condition
					Refractory	Subjective Improvement	Objective Improvement		
9	Involvement of bladder and parametrium	4/23/14	6,320	5/12/14 to 7/ 5/14		Yes		None	Died from bladder and vulva invasion
11	Involvement of bladder and rectum	3/18/14	1 750 3,200 2,550	4/14/14 to 4/23/14 6/17/14 to 7/23/14 8/12/14 to 8/23/14		Yes		None	Died Patient after remarkable primary result neglected to return until June Radium now refractory
12	Extensive involvement of parametrium and rectum	3/ 8/14	7 875	4/ 2/14 to 6/11/14		Yes	Yes	July 14, 1914 Abdominal panhysterectomy	Died Dec 20, 1914 from invasion of rectum
16	Involvement of parametrium	3/ 5/14	9,043	4/ 1/14 to 9/ 9/14		Yes	Yes	April 24 1914 Abdominal panhysterectomy	Well Pelvis normal
18	Marked cachexia	3/20/14	8 700	4/ 1/14 to 7/31/14		Yes	Yes		Died August, 1914 from invasion of bladder and exhaustion
22	Extensive involvement of vaginal vault	10/ 8/14	4,000	10/17/14 to 10/22/14	Yes				Died December 1914 from exhaustion
23	Extensive involvement of vagina and parametrium	9/26/14	6,800 1,200	10/19/14 to 11/ 1/14 2/ 9/15 to 2/11/15		Yes	Yes		Well Pelvis normal
29	Involvement of anterior vaginal wall	1/ 6/15	3,500	1/21/14 to 1/24/15		Yes	Yes	Repair of vesicovaginal fistula March, 1915	Well except fistula
30	Involvement of parametrium	3/16/15	3 700 850	3/20/15 to 4/ 4/15 4/26/15		Yes	Yes		June 11, 1915 metastasis of right inguinal glands
40	Involvement of bladder and parametrium	4/ 7/15	5,650	4/15/15 to 5/ 6/15		Yes			
36	Pyometra, involvement of parametrium	3/10/15	2,925	3/12/15 to 3/23/15		Yes	Yes		Panhysterectomy could not be completed Supravaginal amputation

radium treatment and cauterization Another patient after a successful primary result did not return for a reexamination, and has not been heard from The third one has again a healthy vagina, and the pelvis is free from indurating masses, though the entire vaginal canal was a mass of carcinomatous growths extending up into the base of the right broad ligament and down into the fourchet

Of the eight operable cases (Table 5) treated by surgery and radium, one patient died nine months afterward from a metastasis of the liver, another one two months later from a severe hemorrhage from the vagina The others are at this time in a normal condition and do not show a recurrence The average time which has elapsed since the operation is eight months

TABLE 3—INOPERABLE CANCERS TREATED ONLY WITH RADIUM

Case Number	Cause of Inoperability	Total Mg Hrs of Radium Element Applied	Duration of Treatment	Primary Results: Refractory	Primary Results: Subjective Improvement	Primary Results: Objective Improvement	Further Treatment	Result and Present Condition
[illegible]	Extensive involvement of vagina	9,25	5 30/14 to 9 4/14		Yes			Cauterization Nov 3 1913 Has vesicovaginal fistula cachectic.
5	Involvement of entire vagina rectum vulva	9,900	6/ 1 14 to 8 19 14	Yes				Had colostomy Died from exhaustion
14	Involvement of right ureter and sigmoid	9,250	6/ 7/14 to 8/ 5 14		Yes	Yes		Aug 5 1914 abd panhysterectomy resection of sigmoid Died Nov 20 1914 from carcinomatosis
15	Involvement of parametrium and rectum	8,312	4/ 4/14 to 6 17 14		Yes			Oct 10 1913 colostomy Died Jan 1915 cancer of liver
19	Chronic endocarditis with decompensation	3,750	7 19/14 to 8 9 14	Yes				Died August 1914 from endocarditis
21	Extensive involvement of rectum	1 125	7 29 14 to 8/ 8 14	Yes				Patient refused further treatment on account of rectal tenesmus caused by radium had colostomy died
25	Cachexia and local extension of tumor	8,875	11/ 6/14 to 12/ 5/14	Yes				Died
27	Pyosalpinx and involvement of abdominal organs	4 150	11 27 14 to 12/ 3/14	Yes				Died
28	Extensive involvement of bladder	3 600	12/31/14 to 1/25/15		Yes	Yes	Dec 31 1914 cystotomy for insertion of radium	Died January 1915 from exhaustion after hip amputation for path fracture of femur due to metastasis
30	Extensive involvement of bladder	2 400	1/31/14 to 2/ 2/15		Yes	Yes	Jan 25 1915 exploratory cystotomy	Bladder free from tumor mass gained in weight and strength
33	Cachexia vagina and bladder invaded	4,800	2/ 6/15 to 2 22/15	Yes				Developed vesicovaginal fistula refused to continue treatment Died
36	Pyometra	2,925	12 23/15 to 8/22/15		Yes	Yes		Cervix now normal.
37	Involvement of bladder	1 700	3 15 14 to 3/20/15	Yes			March 8 1915 exploratory laparotomy	Had a thrombophlebitis Exacerbation Died from septicemia
31	Extensive involvement of rectum	4,800	2/12 to 4/ 2		Yes	Yes		Rectum normal and freely movable. Returned to work

TABLE 4—RECURRENT CANCERS

Case Number	Date of Primary Operation	Character of Operation	Date of Recurrence	Condition of Pelvic Organs	Total Mg H of Radium Element Applied	Duration of Treatment	Primary Results: Refractory	Primary Results: Subjective Improvement	Primary Results: Objective Improvement	Remarks and Results
3	July 1910	Vaginal panhysterectomy	June 1914	Nodule and ulcer size of bean in vaginal vault	10,350	7/27/14 to 11/30/14		Yes	Yes	Patient succumbed to an intercurrent disease March 1915 cauterization 7/31/14
8	Jan 9 1913 Sept 16 1913	Abd hysterectomy Vag cauterization	Sept 1913	Involvement of entire vagina	5 700	4/ 6/14 to 5/28/14		Yes		Vesicovaginal fistula Died Sept 21 1914 from exhaustion
10	Oct 1913	Vag hysterectomy	Oct 1913	Involvement of vagina vulva and perineum	3,375	4/25/14 to 5 13/14	Yes			Septicemia after third radium treatment Died May 1914
18	May	Vag hysterectomy	Apr 1914	Involvement of entire vagina	2,275	6/13/14 to 6/15/14		Yes	Yes	Vagina healed immediately did not return for treatment
20	Aug 12 1912	Vag hysterectomy salpingo-oophorectomy sinistra	Mar 1914	Mass involving right adnexa	3,500	7/10/14 to 7/13/14	Yes			Developed vesicovaginal intestinovaginal fistula succumbed to exhaustion August 1914
26	Sept 2 1914	Abd panhysterectomy	Nov 1914	Ulcer in vaginal vault	2,300	11/23 14 to 11/25 14	Yes			Nov 23 1914 cauterization of vag vault developed intestinal fistula died Dec 27 1914 exhaustion
32	Oct 1913	Vaginal hysterectomy	Apr 1914	Ulcer in vaginal vault involving right parametrium and bladder	5 175	2/15 15 to 3/23/15	Yes			April 20 1915 tumor increasing in size patient loses weight and strength has much pain
34	Fall 1914	Abd panhysterectomy		Mass involving vag vault extending to right up to brim	2,800	3/ 9/15 to 3/20/15	Yes			Losing weight and strength
35	March 1914	Vag and abd panhysterectomy	Aug 1914	Ulcer involving entire vagina and right parametrium	3 900	3/10/15 to 4/ 6/15		Yes	Yes	April 30 1915 vagina and vulva normal and free of any nodular masses
45	4/25/15 6/19/15	Percy cautery Abd hysterectomy	Never compl recovery	Crater involving parametriums	3,950	6/ 1/15 to 6/12/15		Yes		

HISTOLOGIC FINDINGS

The action of the gamma rays on carcinoma tissue has been studied in eight cases, namely, six uterine (Cases 12, 14, 16, 24, 29 and 39), one rectal (Case 31), and one skin cancer (Case 85) The latter has been added, as it affords a particularly favorable instance for the study of the changes occurring in carcinoma cells by the action of radium The reproductions of the first microscopic sections (Figs 1 and 6) were made from tissues removed from the tumor before the beginning of the radium treatment The time of removal of the other sections is stated beneath each illustration, also the amount of radium element applied preceding the removal of the sections, and the time duration of the application of each course

The histologic changes may be divided into four stages

The first stage is characterized by an enlargement of the carcinoma cells, a hyperchromatosis and a pyknosis of the nuclei They are evident in all the cases examined These changes usually occur within about ten days after the first application of radium (Figs 3 and 7)

TABLE 5—CANCERS TREATED BY SURGERY AND RADIUM

Case Number	Date of Operation	Character of Operation	Complications of Convalescence	Mg Hrs of Radium Element Applied	Duration of Radium Treatment	Result	Remarks and Present Condition
1	9/25/14	Abd panhysterectomy, vag cauterization	Vesico abd and vesicovag fistula	4 400	10/10/14 to 10/26/11	Perfect recovery	Died two months afterward from a vaginal hemorrhage
4	8/26/14	Vag cauterization, abd panhysterectomy	Vesicovaginal fistula	6 775	9/ 6/14 to 10/13/14	Recovery but fistula	Well, April, 1915, fistula closed
6	7/17/14	Perineal cystotomy and cauterization	None	3,150	8/ 3/14 to 9/ 1/14	Recovered	
7	7/ 2/14	Resection of 8″ of rectum, perineal operation	None	2,175	7/16/14 to 8/ 1/14 and 10/30-31/14	Recovered	Dying from metastatic cancer of liver
17	4/20 24/14	Vag cauterization, abd panhysterectomy	None	3,525	5/15/14 to 5/30/14	Recovered	
24	10/29/14	Abd panhysterectomy	None	4 150	10/21 23 and 11/11 13/14	Recovered	Oct 21 1914, diagnostic currettage well
38	3/16/15	Abrasion of mucosa, amputation of cervix					
	3/16/15	Abdominal hysterectomy	None	2,550	3/21 to 3/28/15	Recovered	
41	4/10/15	Vag cauterization abd panhysterectomy	None	3 950	4/19 to 5/4		Extensive involvement of anterior vaginal wall Really an inoperable case impossible to remove entire growth
44	5/20/15	Abd panhysterectomy, cauterization	None	4 000	5/23-31/15		Extensive involvement of right parametrium, *impossible to remove* entire tumor mass

In the second stage we observe karyolysis, karyorrhexis, cytolysis and cell detritus Figure 3 shows many evidences of such changes They are observed as early as from the first to the third week of the treatment

The third stage shows an absorption of the cellular and nuclear debris by phagocytes Macrophages and microphages are concerned in this step Microphagic activity is highly evident in Figure 3, while macrophages are seen to be active in Figure 8

The fourth stage is the stage of connective tissue proliferation and scar formation It completes the histologic cure of cancer The places left vacant by the dead carcinoma cells are immediately filled by young fibroblasts derived from the connective tissue stroma of the tumor The fibroblasts become differentiated Figure 4 shows the connective tissue regeneration The fourth stage appears usually after from the first to the third month, but may occur much sooner

A difference frequently exists between the clinical results and the histologic findings For instance, in Case 12 there was evidence of a completely destroyed cancer tumor, yet the patient succumbed to a bowel invasion, proving that some cancer cells either remained uninfluenced by the radium or regenerated after the subsidence of the action of the rays Therefore, certain questions arise which call for definite answers before we can positively state that radium rays cause a degeneration and ultimate death of cancer tissue and a simultaneous regeneration of connective tissue

1 Are we able by histologic examination to differentiate the necrobiotic changes in the carcinoma cells brought about by natural and artificial conditions from those caused by the influence of radium rays? It is evident that we cannot do so Cells undergo necrobiotic changes in the course of their existence Heat, caustics and alcohol, brought in contact with the tissues, may produce the same changes, as is well known However, such general and extensive changes as seen in these specimens, the absence of cell degeneration as evidenced in the first sections, and, finally, the regularity of their occurrence in all the tissues investigated, even in those not previously cauterized, permit us to state that they must be caused by the action of the gamma rays

2 Can we, by examination of small pieces of tissue removed from the growth, determine the extent and intensity of the action of radium rays? We cannot from such an examination, but could do so from serial sections of all the organs removed either intra vitam during operations, or, preferably, postmortem

I have, fortunately, four cases in which an abdominal panhysterectomy was performed after a clinical cure of the cancer by the use of radium rays was obtained (Cases 12, 14, 16 and 24) Serial sections were made from the tissues removed A microscopic examination revealed that the cytolytic changes were generally present throughout the organs removed This *does not prove that distantly* located foci were not left behind As a matter of fact, Patients 12 and 14 died subsequently from cancer This shows that viable cancer cells were left behind somewhere in the pelvis Bumm examined tissues acted on by gamma rays and removed afterward during postmortem examinations He estimated that the intensity of the gamma rays sufficient to destroy carcinoma tissue extended into a radius of 4 cm Within this area of intensity, carcinoma cells were not found present, beyond it, however, typical unchanged cancer cell nests were still found to exist In other words, extensive carcinoma growths are only partially destroyed by gamma rays This area of destruction, however, has a diameter of 8 cm, and enables us to reach tissues which a knife could never remove

3 Is it possible by such microscopic examinations to state whether a carcinoma cell has perished or whether it might not regenerate after the action of the radium rays ceases? The following citation will illustrate the answer to this question Cheron and Rubens-Duval treated a patient suffering from an inoperable carcinoma of the cervix with radium during November, 1910, and January, 1911 The patient was apparently clinically cured She died from an intercurrent disease (a cerebral softening) during April, 1912, fifteen months after the beginning of the radium treatment All the internal organs and tissues were removed postmortem, and a careful serial histologic examination of all the tissues did not reveal a single carcinoma cell at any place of the organism A complete anatomic cure by radium rays has thus been demonstrated

My investigations demonstrate the uniformity and general extent of the necrobiotic changes brought about in the carcinoma cells by the action of the gamma rays Bumm's researches fix the extent of the arèa of intensity of the rays within which a carcinoma will become destroyed, and Cheron and Rubens-Duval's case proves the capability or efficiency of the radium rays to bring about an anatomic cure of cancer

CONCLUSIONS

1 The best method of applying radium is the interval method by which from 3,000 to 4,000 milligram hours of radium element are applied within from about fourteen to twenty-one days

2 The alpha and beta rays must be arrested by a brass filter of from 1 to 1 5 mm thickness

3 The secondary rays, forming in the metal filter are rendered inert by a rubber cot of from 1 to 3 mm thickness

4 Inoperable cancers that are not far advanced so that cauterization is not contraindicated yield satisfactorily to radium therapy

5 Advanced inoperable and recurrent cancers are ordinarily refractory toward the radium rays Any improvement is at least very temporary

6 The patients treated with the rays after surgical removal of the organs have done well, although the time elapsed since the treatment averages eight months

7 Patients suffering from cancer should be treated surgically and then radiologically, and if surgery is contraindicated they should receive radium treatment, which at least relieves the subjective symptoms and often the objective ones

8 The time elapsed since the commencement of the radium treatment in all the cases enumerated is too short to permit definite opinion as to the remote results of radium treatment

9 Clinical and histologic studies enable us to pronounce the radium rays a valuable addition to the therapy of cancer

10 It will require years of constant observation to demonstrate such results as anatomic cures

11 The same measure that is applied to establish the efficacy of surgical procedures in cancer treatment must certainly be employed in radiotherapy

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS BURNAM AND KELLY, AND SCHMITZ

Dr J F Percy Galesburg, Ill Ewing of New York said a few years ago that the balance in cancer is easily upset, and this must be true, because there are a number of methods of destroying or inhibiting cancer that have a certain number of clinical cures to their credit It would be interesting if we could go back in a historical way to these various methods and determine just how much they have accomplished One thing has been brought out by both of these papers, and that is the totally inexplicable way some cases are clinically cured and other cases apparently of the same type are either made worse or not affected by the same treatment The problem of the treatment of inoperable cancer of the uterus has always been of the gross mass and it is a question whether or not radium, in the great mass of cancer usually seen in the cervix, is as valuable as some other method that will at once, or in a comparatively few minutes get rid of this gross mass Another problem is the metastasis, and I am glad that both the essayists have mentioned an immunity, or, at least, suggested it. This immunity is undoubtedly developed in greater or less degree, and without doubt takes care, in many cases, of the metastases after the destruction of the gross mass At least I am convinced of this from my own experience I am especially interested in the destruction of the gross mass by heat I am convinced that this method is the most certain of any of the methods that have been brought to our attention In addition, it does not require specialized judgment and the apparatus required is comparatively inexpensive. One of the difficulties of radium and the Roentgen ray in attacking the gross mass of cancer is that they break down a lot of cancer cells, and if drainage is not provided, an overdose of the broken-down cancer cells may be absorbed and kill the patient. In other words, even with radium or the Roentgen ray, if one attacks the gross mass he must provide for some form of drainage. This is easily done with the heat technic. It is not easily done with either radium or the Roentgen ray

Dr. S M D Clark, New Orleans The two papers show definitely that we are not marking time in the warfare on cancer We are beginning to see rays of light, and I feel confident that if the present pressure is kept up, our results will progressively improve I am sorry that I cannot discuss the subject from the radium point of view, but since I note that the best results obtained by one of the essayists was when using the radical operation after the growth had been transformed by using radium it seems appropriate to consider cancer of the uterus from another angle

Though the Percy heat method has great merit, still when viewed in the light of a cure, it falls short and is to be looked on more as an adjunct or link in the chain of treatment Time is too short to go into the detail of my combination method but its chief point rests in being able to transform inoperable into operable cases by performing the work as a two-stage operation At the first sitting the abdomen is opened and both internal iliacs and one ovarian artery are tied primarily for the purpose of starving the growth as well as to control secondary hemorrhage. Heat is applied at the same time. After three to five weeks interval the patient is transformed constitutionally and locally, when the radical removal is done. This method increases operability and decreases the primary mortality If we keep accurate records of our work, in ten years stock can be taken of our results, and the best method adopted

Dr. Henry Schmitz Chicago It is a question of developing first the therapy, and second the technic of the application of radium. If we do know the amount and the manner in which we should use it, our results will improve. My first cases treated were not so successful as at present I feel that radium will do more in the eradication of cancer than any other means I have applied surgery, heat and everything I possibly could use, but since I have been using radium I feel more confident of benefiting my patients

Dr Curtis F Burnam, Baltimore I omitted one thing that I intended to say, that in the beginning we catheterized and curetted our big masses More recently we are not doing that So far as I know, *there is no general upset in the treatment* We give a single treatment, and repeat it in six weeks if the growth is still there If it has gone, we wait three months, but if it has not gone we repeat, and the patient rarely stays in the hospital longer than the day of treatment

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THE ROENTGEN-RAY TREATMENT OF SKIN DISEASES*

GEORGE M MacKEE, MD
Instructor in Dermatology, College of Physicians and Surgeons, Columbia University, Chief of the Department of Dermatology and Syphilology, Vanderbilt Clinic, Consulting Dermatologist St Vincent's Hospital, Visiting Dermatologist, Sea View Hospital
NEW YORK

THE DERMATOLOGIST AND THE RADIOLOGIST

Now that Roentgen-ray work is becoming highly specialized, there seems to be a tendency to separate dermatology from roentgenotherapy This is both desirable and undesirable So far as concerns the Roentgen-ray treatment of skin diseases, two general attributes are essential — a knowledge of dermatology and skill in modern Roentgen-ray technic The dermatologist possesses the former and he can easily acquire the latter, for the difficulties are more imaginary than real The pure roentgenologist, while being expert in Roentgen-ray technic, lacks a dermatologic training, as also do many of the physicians who refer patients to him for treatment To avoid errors in diagnosis and the obvious consequences, it would seem advisable to adhere to one of three schemes for the dermatologist to employ the Roentgen ray, for the roentgenologist to have at least a clinical knowledge of dermatology, or for both to combine their skill in behalf of the patient

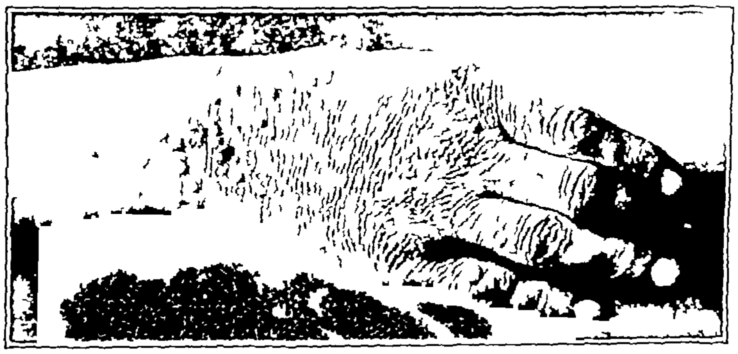

Fig 3 —*A group of hypertrophic lichen planus papules on the wrist* Also two common warts, one on the little finger and one at the base of the index finger

TECHNIC

In a short, practical paper of this kind it is not possible actually to describe a technic A general outline of modern methods may, however, be of interest Two methods are in vogue at the present moment, namely, intensive and divided doses

Intensive Method—Here the quality of the ray used is ascertained by direct measurement (Benoist, Walter or Wehnelt instruments), while it is maintained by means of *indirect measurement* (milliamperemeter, spark-gap, etc) The quantity is measured directly, through the employment of reliable radiometers such as those originated by Holzknecht and Corbett In this way every dose is estimated as accurately as modern science will allow An intensive treatment may consist of enough rays to produce a second degree Roentgen dermatitis, a simple erythema, a loss of hair without erythema, or a dose that is too small to produce a visible effect on the normal skin, but yet too large to allow of its repetition within three or four weeks The method is thoroughly established and is sufficiently accurate for all practical purposes No better example of its accuracy can be demanded than the excellent results associated with the intensive Roentgen-ray treatment of ringworm and favus of the scalp

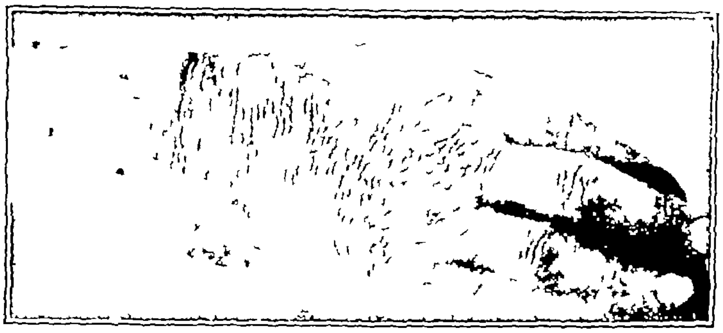

Fig 4 —Same as Figure 3 after one dose of H 4, B 9 was applied to the lichen lesions *Note the area of temporary pigmentation at the wrist* Note also that the warts have disappeared without having been exposed to the ray

There is a difference of opinion regarding the quality of ray to be employed in different cutaneous diseases *Contrary to* the general consensus I have found a "hard" ray (B 8 to 10) preferable for routine work and seldom use a ray of lower penetration

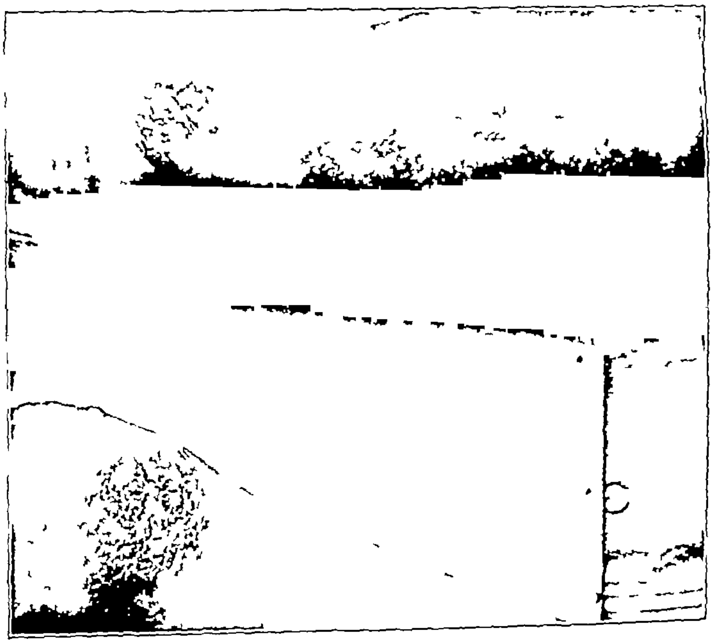

Fig 5 —*Chronic eczema with acute exacerbations*

In considering the quantity, the question of idiosyncrasy and susceptibility should be discussed True idiosyncrasy must be a very rare phenomenon Again I direct attention to thousands of cases of tinea tonsurans that have been treated with intensive Roentgen radiation without a single example of idiosyncrasy having been encountered. As a matter of fact, as an operator becomes more expert and experienced he employs the term less frequently. I do not deny the possibility of true idiosyncrasy—it undoubtedly does exist—but it is extremely uncommon. Hypersusceptibility on the other hand is very common. Some parts of the body are more sensitive than others. The skin of aged individuals will tolerate larger doses than will the integument of children. Chemicals, such as iodin, tar, mercury, chrysarobin, salicylic acid, etc. will markedly enhance the action of the ray. The skin of individuals suffering from certain diseases—mycosis fungoides, goiter, eczema, psoriasis—may be hypersensitive. The intensive dose will vary in amount according to the effect desired and the disease treated. In epithelioma it will be in the neighborhood of 8 or 10 Holzknecht units, in keloid, from 4 to 6 units, tinea tonsurans, 4 to 5 units, eczema and psoriasis, 2 to 3 units, etc.

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* From the Department of Dermatology and Syphilology, College of Physicians and Surgeons, Columbia University, New York.

* Read before the Section on Dermatology at the Sixty Sixth Annual Session of the American Medical Association, San Francisco June 1915

* On account of lack of space this paper has been abbreviated for The Journal It will appear in full in the *Transactions* of the Section and in the author's reprints

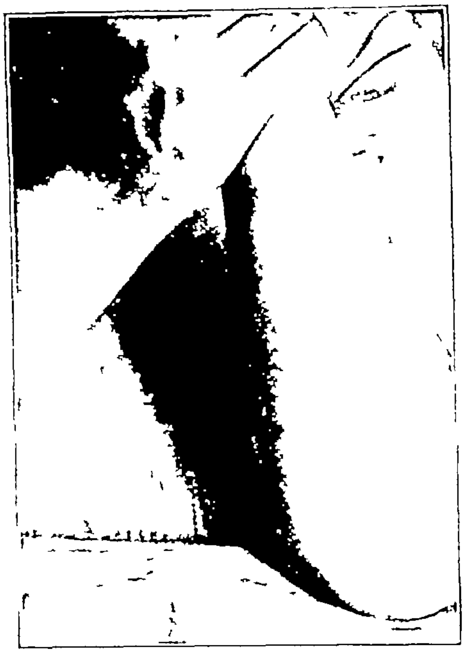

Fig. 6.—Same as Figure 5 after three treatments at weekly intervals, totaling about H 6, B 9.

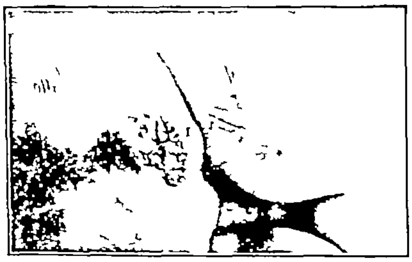

Fig. 11.—Painful plantar wart of 4 years duration.

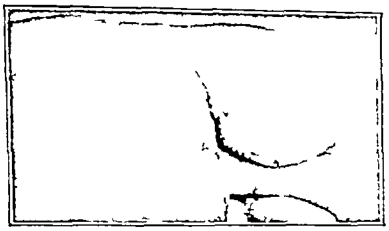

Fig. 12.—Same as Figure 11 after two intensive treatments each of which consisted of H 6, B 9.

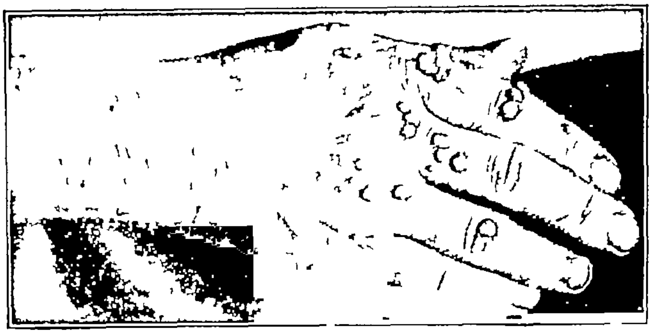

Fig. 13.—Multiple common warts.

Divided Method.—The divided technic is not as accurate and in some diseases it is not nearly as efficacious as is the intensive method. In fact, there are diseases, such as epithelioma and tinea tonsurans, in which the divided method may even prove injurious. On the other hand, in diseases in which stimulation is beneficial (eczema, psoriasis, etc.) it is as good if not actually superior to intensive treatment. In speaking of the divided method it must be recognized that we are dealing with a modernized technic and not with former obsolete methods in which from 50 to 200 exposures were administered in the treatment of an epithelioma. As a matter of fact, the divided method of today, when compared with older technics, is decidedly intensive.

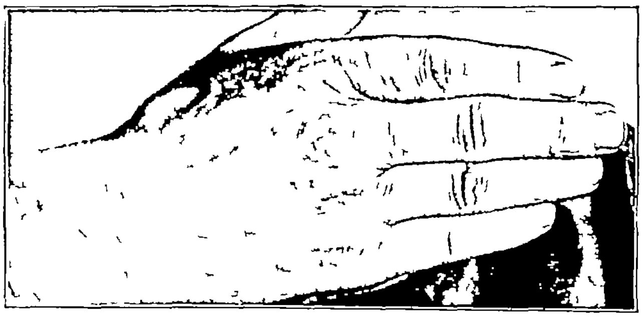

Fig. 14.—Same as Figure 13 after one treatment consisting of H 4, B 9.

Briefly the technic is as follows: Certain fixed indirect factors are established and used as "constants." That is to say the anode of the tube is always at the same distance from the skin, the milliamperage, the spark-gap distance, the length of the conducting wires, the speed of the motor, t transformer cycle, the rheostats, and in fact, all ad

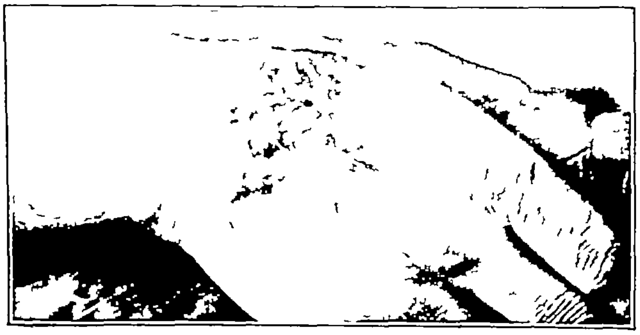

Fig. 17.—An exceedingly hard keloid following an electric burn.

parts are always employed in exactly the same manner for every treatment. Now, with all these "constants" established the time necessary to produce the so-called pastille or erythema dose (about 5 H) is ascertained. Let us assume that the required time is twenty minutes. This may be divided into four treatments of five minutes each or eight treatments of 2½ minutes each, and administered at intervals of from three to seven days, so that the full erythema dose is given in the course of one month.

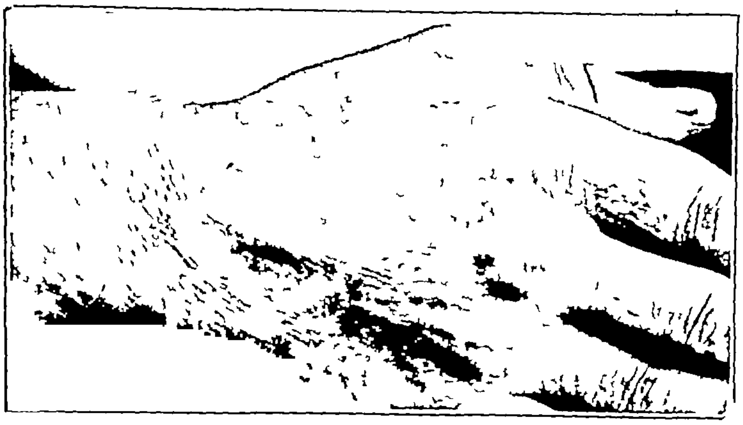

Fig. 18.—Same as Figure 17 after five intensive treatments totaling H 40, B 9, filtered through 3 mm. of aluminum.

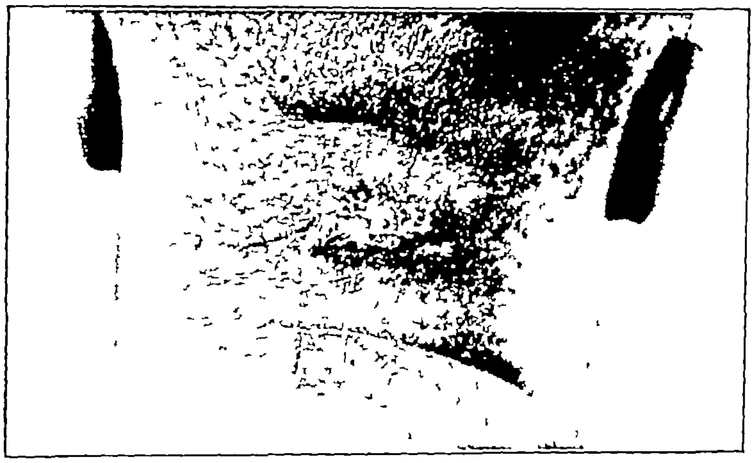

Fig. 21.—Dermatitis papillaris capillitii (acne keloid) in a negro.

There are several technics for the divided method, it will vary according to the apparatus employed, and, also, in accordance with the training, skill and experience of the operator. Personal equation is an important factor.

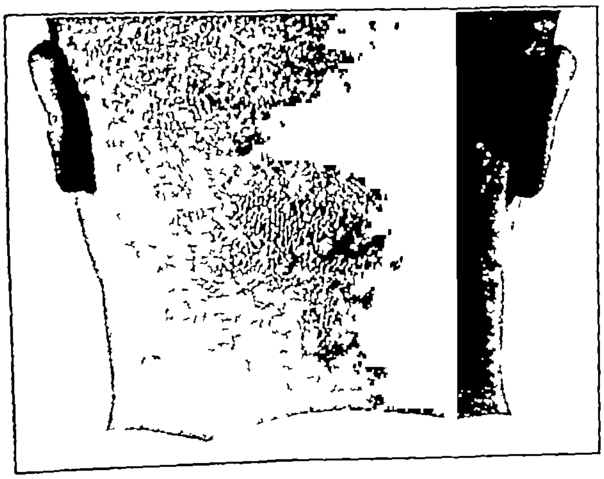

Fig. 22.—Same as Figure 21 after treatment. The lesions were unusually obstinate, and required ten intensive treatments totaling H 50, B 9. The treated skin was depigmented, a defect corrected by using a cutaneous stain.

DISEASES AMENABLE TO ROENTGEN-RAY TREATMENT

INFLAMMATIONS

Erythema Induratum (Bazin's Disease).—This affection, now known to be a true but benign type of cutaneous tuberculosis, yields readily, as a rule, to the Roentgen ray. One intensive (suberythema) dose will usually suffice to produce a cure in the ulcerative type of the disease. The subcutaneous nodules are more rebellious. Rest, hygiene, tonics, etc., will usually suffice to cure this disease in a few months, but in stubborn cases the Roentgen ray is of considerable service.

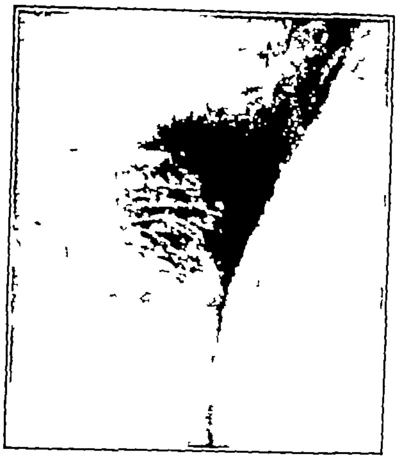

Fig. 25.—Hypertrophic lupus vulgaris returning after operation.

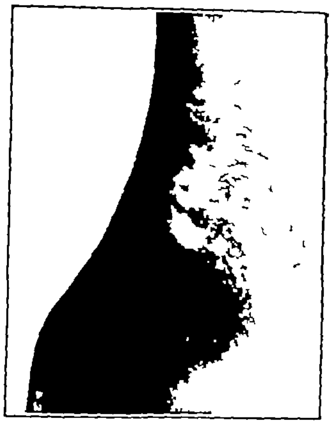

Fig. 26.—Same as Figure 25 after one intensive Roentgen-ray treatment.

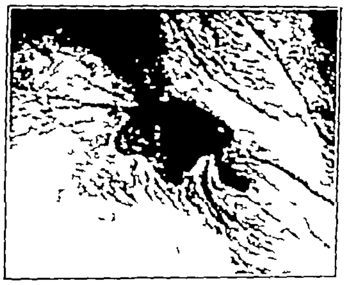

Fig. 32.—Ulcerating basal cell epithelioma with considerable induration of margin.

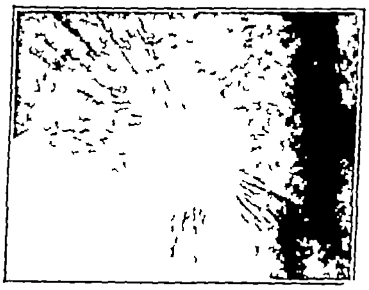

Fig. 33.—Same as Figure 32 after one intensive treatment consisting of H 8, B 9. Treated three years ago—no relapse.

Granuloma Annulare.—I have treated only one case of this disease. The patient presented numerous tumors on the hands, arms and ears. Each lesion disappeared under the influence of a single treatment of 4 H units of a B 9 ray—in other words, a suberythema dose. The Roentgen ray, of course, will

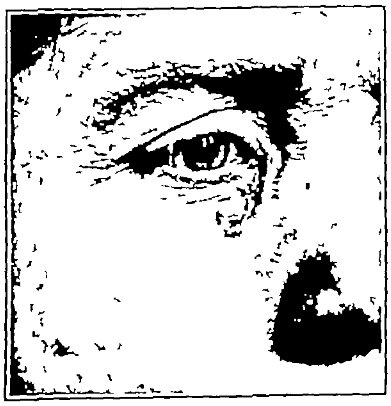

Fig. 34.—Ulceronodular epithelioma of inner canthus—a favorite situation and a difficult position for operation.

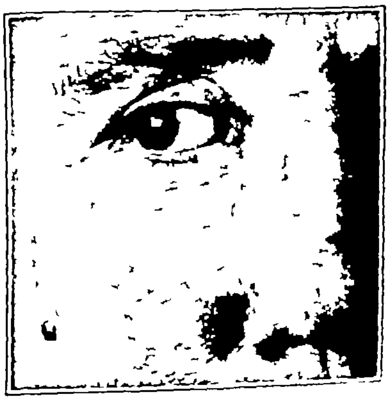

Fig. 35.—Same as Figure 34 after one intensive treatment of H 8, B 9. Treated three years ago—no relapse.

have very little if any influence on the future course of the disease

Prurigo—Small doses of the Roentgen ray produce favorable effects in this recalcitrant juvenile affection, chiefly through its antipruritic powers It does not materially alter the course of the disease The divided-dose technic is indicated here and after one course of treatment an interval of several months should elapse before another course is given in order to avoid possible injury to the epiphyses

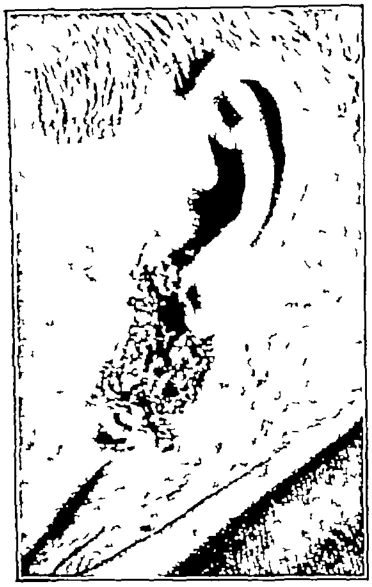
Fig 38 —Squamous-cell (malignant) epithelioma — hard and deep seated

Lichen Planus—From a practical point of view the Roentgen ray is of service only in the hypertrophic type of the disease, when there are a few isolated, resistant patches Here it is extremely efficacious A few days after a single suberythema dose the itching ceases and in two or three weeks the lesions disappear

Psoriasis—Ordinarily, psoriasis is easily controlled by the proper use of dermatologic remedies, so that the use of the Roentgen ray is limited to resistant lesions or to the so-called inveterate patches of the disease The psoriatic skin is hypersensitive to Roentgen radiation, possibly on account of the previous use of chrysarobin or other irritating chemicals For this reason and also because, as a rule, very little ray is required, it is preferable to employ the divided-dose technic In stubborn cases the Roentgen ray will be found of real value

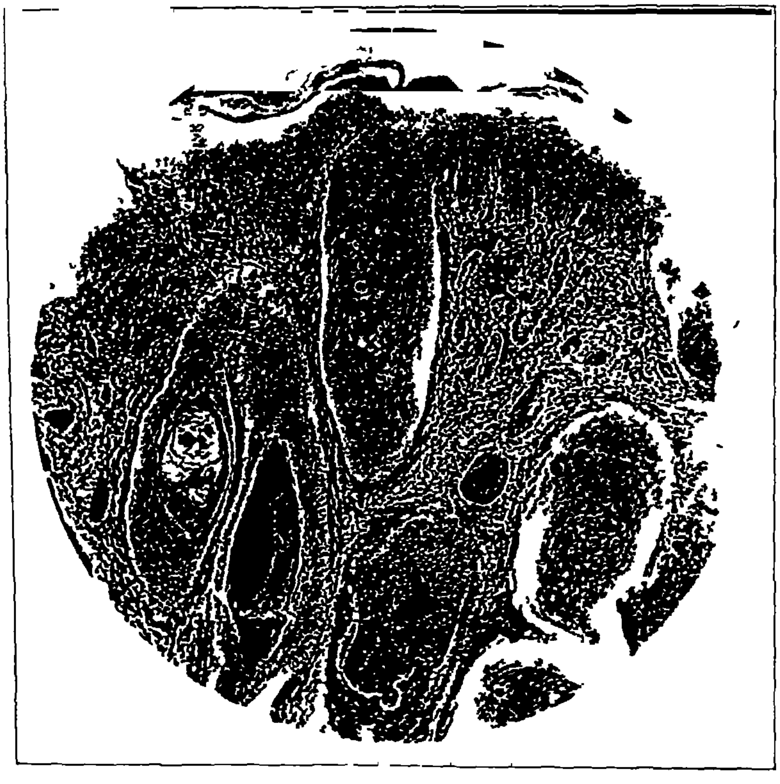
Fig 39—Photomicrograph of small piece of tissue removed from lesion shown in Figure 38

Eczema—In eczema the Roentgen ray is of service only in the subacute, chronic and rebellious types of the disease, especially where there are a few isolated, thickened, pruritic patches that have resisted ordinary measures There is, however, one exception, namely, the acute or subacute vesiculosquamous eczema occurring in patches on the dorsal surfaces of the hands and fingers Here the Roentgen ray is exceedingly efficacious, and is specifically indicated, because this clinical type of the disease is notoriously rebellious to all other therapeutic measures

The obstinate keratotic eczema of the palms and the soles will usually yield rather promptly to the Roentgen ray after they have refused to respond to other forms of treatment In most types of eczema, as in psoriasis, the Roentgen ray is not indicated until regular dermatologic remedies have been tried, for, as a rule, the simpler measures will suffice Again, as in psoriasis, and for the same reasons, the divided-dose technic should be employed

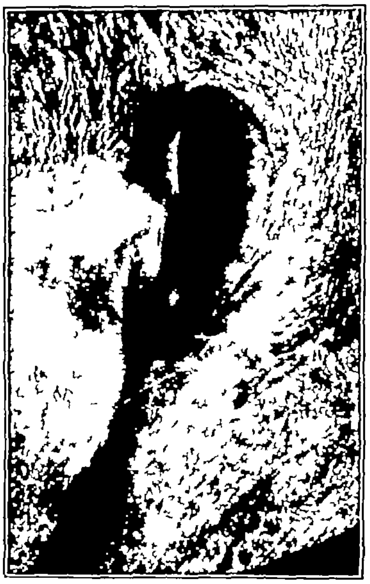
Fig 40—Case in Fig 38 after two filtered intensive doses of H 16, no relapse for one year

Lichenification and Lichen Circumscriptus—In these affections, a single small dose of the Roentgen ray will usually suffice to overcome the itching at once and cause the eruption to disappear in a few weeks, especially if the treatment is reinforced by ordinary dermatologic remedies

The divided technic gives equally good results

Pompholyx (Dyshydrosis) — Fractional doses of the Roentgen ray are a help in combating this affection, which not infrequently is stubborn

HYPERTROPHIES

Clavus, Callositas and Verrucae—Corns will usually respond to one or two intensive doses It is necessary, however, in order to avoid recurrences, to ascertain and overcome the cause such as pressure from tight or improper shoes Some of my most brilliant therapeutic results have been obtained in en-ray treatment of callositas, or painful warts, certainly the patients are very grateful for the relief I know of no other treatment that can compare with the Roentgen ray in efficiency The thickened horny layer should be removed with a razor and then an intensive dose of the Roentgen ray administered The first treatment may consist of H 4, B 9 In some instances this one application will suffice More often, however, a second treatment will be necessary, and this should not be given in less than four weeks from the first application, and the dose may be increased, unless contraindicated, to H 6, B 9 I have never been compelled to give more than three treatments to produce a complete cure, and as yet I have not had a single recurrence My results with the intensive treatment have been far superior to those obtained before I developed the intensive technic The common wart (verruca vulgaris) will usually disappear as a result of a single intensive treatment Not infrequently the treatment of one wart will cause the disappearance of similar lesions in the same neighborhood Various types of hyperkeratosis may be influenced by the Roentgen ray, such, for example, as senile keratosis, keratosis palmaris et plantaris, ichthyosis, keratodermia, etc

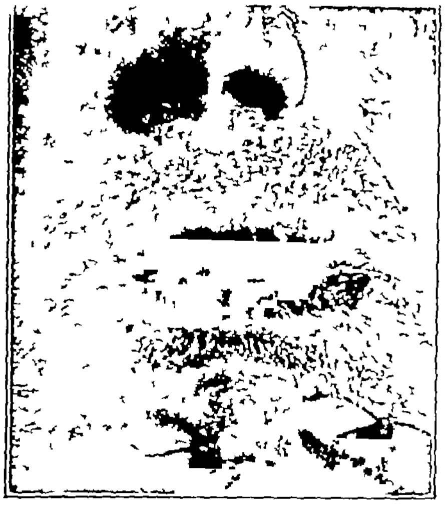

Fig 45 —Epithelioma of lip without glandular involvement The lesion consisted mostly of a keratosis, but there was some clinical infiltration This should probably be considered a precpithelioma tous lesion, or a very early epithelioma

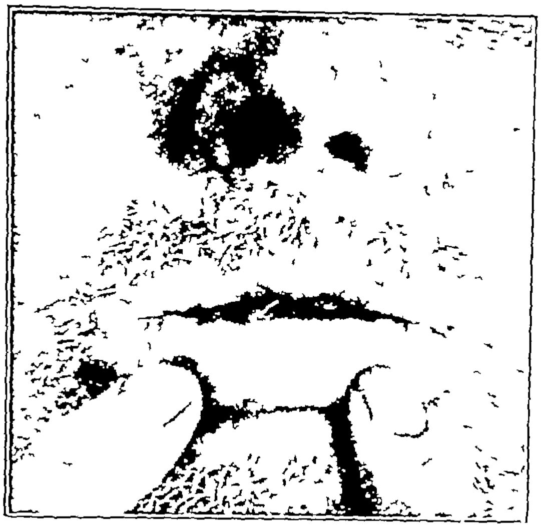

Fig 46 —Same as Figure 45 The thickened horny layer was first removed and then two intensive doses of H 8 each were administered There has been no return over a period of two years There was a little leukoplakia, which also disappeared

New Growths

Keloid —Excellent therapeutic and cosmetic results can be obtained in hypertrophic scars, traumatic and "spontaneous" keloids and acne keloid (dermatitis papillaris capillitii) The Roentgen ray is indicated in these affections not only because of its efficacy, but because there is no other reliable treatment In very large keloids it is preferable to ablate and then apply the Roentgen ray as a prophylactic This may be done, also, in small keloids, in order to obtain a perfect cosmetic result I have never observed a recurrence after Roentgen-ray treatment Unfortunately, keloid requires large quantities of Roentgen ray, and for this reason the intensive method is to be preferred A well-developed keloid will necessitate from two to six intensive treatments It is not safe to apply more than six or eight intensive doses at intervals of from four to six weeks, because of the danger of permanent injury to the skin In very obstinate cases it is preferable to intervene surgically and employ Roentgen ray as a prophylactic, or to give the intensive doses in courses, each course consisting of three treatments at intervals of four to six weeks, with an interval of one year between courses

Nevus Vasculosus —The Roentgen ray is capable of producing good results in vascular nevi The treatment is apparently more efficacious in deep-seated nevi (cavernous angioma) than in the superficial "portwine" marks In the past, judging from the literature, radium has produced better results in this affection than has the Roentgen ray, but perhaps the future will see the two agents favorably compared in this respect More experimental work is required, especially in regard to the quality of ray to be used The few cases that I have treated have required several intensive doses of a "hard" ray before much effect was observed It is possible that a "soft" or even an "oversoft" ray will prove more effective

Rhinoscleroma —The Roentgen ray is almost a specific in this rare, disfiguring and uncomfortable disease It should be employed intensively, and on account of the fibrosis a well-filtered, "hard" ray is indicated

Tuberculosis Cutis —In the literature one finds reports of cures obtained with the Roentgen ray in tuberculous ulcers of the skin and mucous membranes, but I have found such lesions exceedingly stubborn unless of a benign type, such as lupus vulgaris or tuberculosis verrucosa cutis The hypertrophic and ulcerative types of lupus vulgaris, even when involving the mucosa, usually yield to from one to three intensive doses The atrophic type of disease, with deeply embedded (apple-jelly) nodules, resists the treatment, at least this has been the case in my hands In the treatment of lupus vulgaris I have found the intensive technic superior to the divided dose method

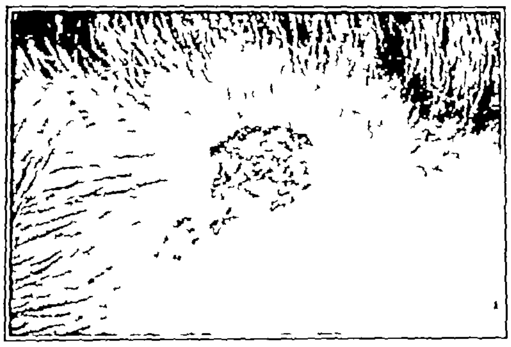

Fig 47 —Melanoma

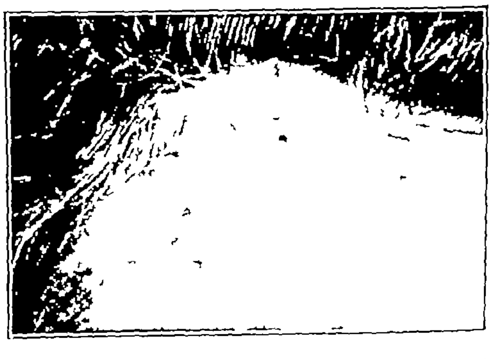

Fig 48 —Same as Figure 47 Patient received three unfiltered, intensive treatments totaling H 14 A few months later there was a relapse Two filtered treatments totaling H 24 were then given No relapse since November, 1914

Relapses may occur, but not as a rule Personally I have not had a single recurrence where the patient remained under treatment until the lesion completely disappeared

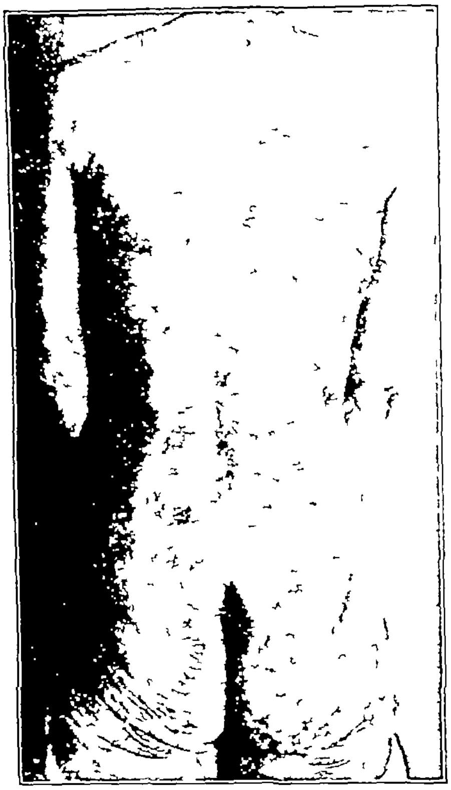
Fig 53 —Mycosis fungoides

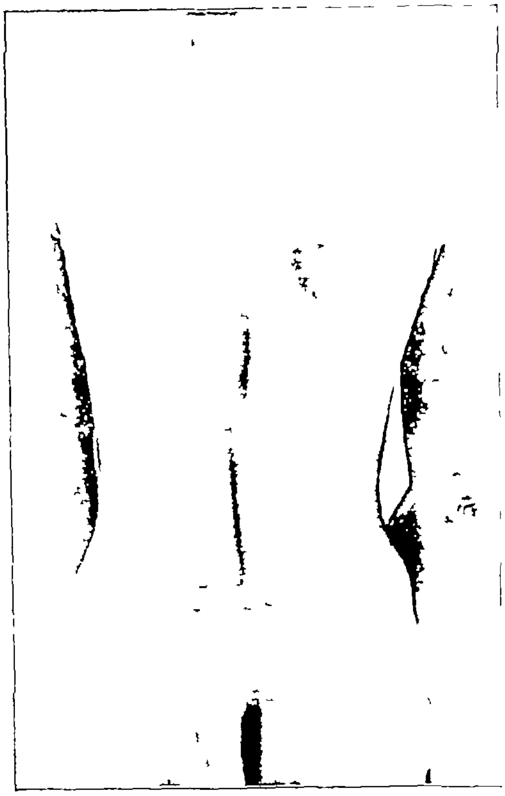
Fig 54 —Same as Figure 53 after one mildly intensive treatment The patient was first immunized by fractional doses applied to lesions on other parts of the body

Tuberculous adenitis, with or without scrofuloderma, yields good results with the intensive treatment Here my best results have been obtained by the use of a "hard" ray filtered through 3 mm of aluminium, the dose ranging from 4 to 8 H, several treatments are necessary as a rule

Tuberculosis verrucosa cutis, if the warty excrescence is first removed by the curet, will yield to a single intensive application Otherwise several treatments may be necessary The cure seems to be permanent

Lupus Erythematosus—Although records of cures of lupus erythematosus by means of Roentgen radiation are found in the literature, I have failed to cure a single *instance of the disease by this method* and therefore I prefer other measures, such as the solid carbon dioxid It seems unwise in lupus erythematosus and atrophic lupus vulgaris, to apply enough ray to permanently injure the skin because these diseases seem to invite the development of malignant epithelioma and excessive Roentgen-ray dosage simply adds fuel to the fire

Epithelioma —The ulcerative type of basal-cell epithelioma (rodent ulcer) can be completely cured with one erythema dose The nodular type may require two or three treatments unless the lesion is first curetted Recurrences are uncommon there is no pain, no scarring and no interference with business, so that it would seem that the Roentgen ray might be considered the method of election in the treatment of this affection There are cases, however, that will not yield to the Roentgen ray, but, fortunately, such instances are *extremely uncommon* The most rebellious examples that I have encountered are those in which the lesion had been treated by obsolete Roentgen-ray methods A few years ago it was not uncommon to hear of an epithelioma receiving as many as 150 Roentgen-ray treatments—small, oft-repeated, stimulating doses These lesions improved to a certain extent and then became very recalcitrant to all forms of treatment, or if they healed under the influence of the Roentgen ray they were very likely to recur The explanation is possibly that so many stimulating doses taught the tissues to resist *the beneficial action of the* Roentgen ray, again, it is possible that so much ray produced an analogous effect to that seen on the hands of the pioneers in Roentgen-ray work It would, therefore, seem advisable to employ intensive treatment and to obtain the maximum benefit with the minimum amount of ray

I have had occasion to treat a number of benign epitheliomas that had been previously rayed by obsolete methods, and while most of them have responded to the intensive technic, some have remained unaffected and many of them have recurred within a year or

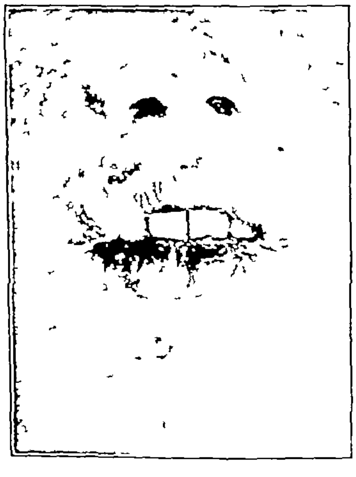
Fig 61 —Chelitis glandularis of long standing with a few herpetic vesicles on chin and right commissure.

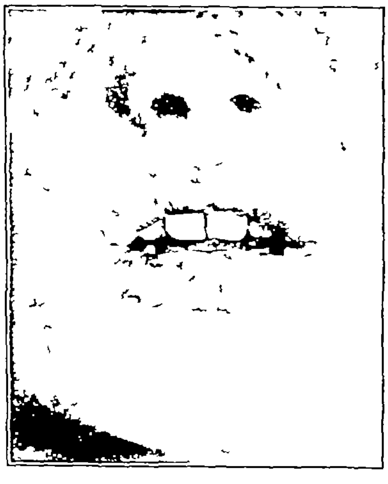
Fig 62 —Same as Figure 61 after one intensive application (H 4 B 9)

two In general it may be said that the longer the lapse of time subsequent to former Roentgen-ray treatment, the greater is the chance of recovery under the intensive technic

In squamous-cell (malignant) epithelioma of the skin the Roentgen ray is *uncertain, although* very brilliant results are occasionally obtained Personally I prefer to elicit surgical aid in these instances and employ the ray intensively as a prophylactic, unless, indeed, the case is inoperable The fact that the Roentgen ray will occasionally cure malignant epithelioma warrants its use in inoperable cases, and as a prophylactic in postoperative cases In such instances it is wise, also, intensively to treat the neighboring lymphatics, even when these are not palpable

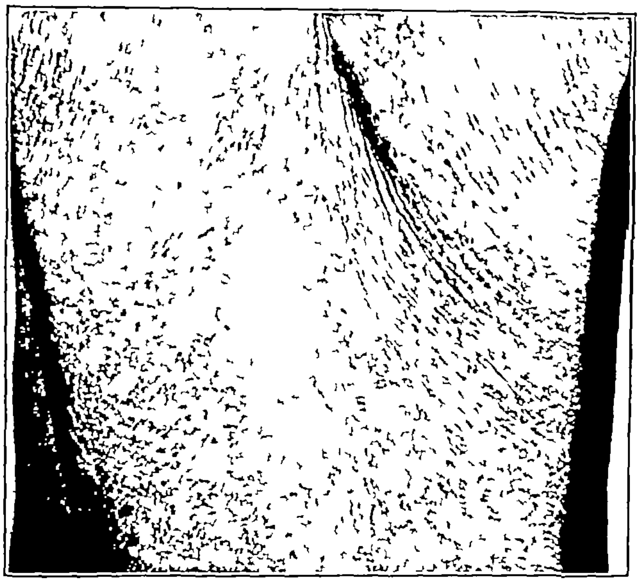

Fig 63 —Ichthyotic skin

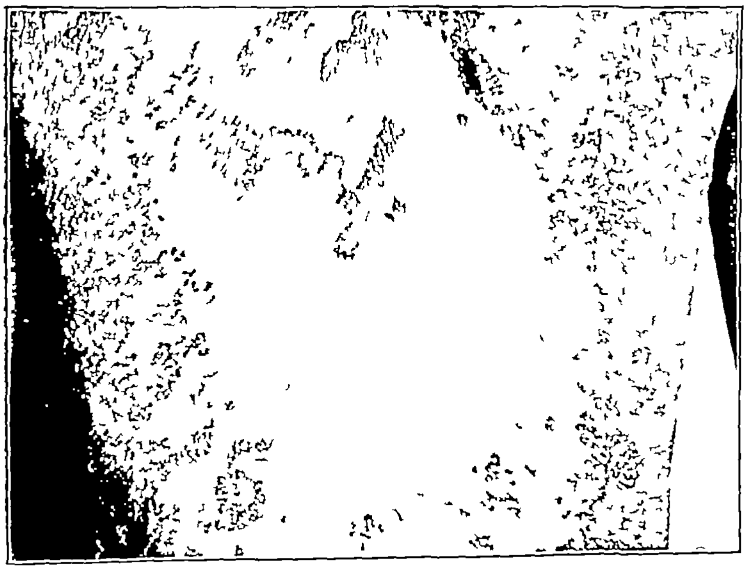

Fig 64 —Same as Figure 63 after one intensive treatment

The same remarks may be repeated in discussing epithelioma of the lips, tongue and other mucous surfaces I have cured (temporarily at least) a number of epitheliomas of the lip, but they have been superficial and the glands were not involved At the present moment it would seem advisable to refer lip cases to the surgeon and rely on the Roentgen ray as a prophylactic, unless the disease is detected in the earliest stages or unless the case is for any reason inoperable In regard to epithelioma of the tongue, buccal mucosa and glans penis, I refer all such cases to the surgeon as soon as the diagnosis is established

Paget's disease, especially if diagnosed early, will yield to a single erythema dose The preepitheliomatous lesions (keratoses) occurring in xeroderma pigmentosum can be removed by intensive Roentgen-ray radiation This is interesting, as such lesions are supposed to be caused by the action of direct or indirect sunlight on a peculiarly susceptible skin In this connection, too, the keratoses produced by the Roentgen ray can be cured by this same agent, especially if employed intensively, and especially, also, if the parts have not been exposed to the Roentgen ray for several years Senile keratoses (senile verruca, seborrheic warts), which are forerunners of epithelioma, readily respond to a single erythema *or even a suberythema* application of the Roentgen ray If there is much thickening of the horny layer, it is advisable to use the curet in order to insure recovery with one application of the ray

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RADIANT ENERGY IN THE TREATMENT OF DISEASES OF THE SKIN *

EVERETT S LAIN, M D
OKLAHOMA CITY

In the discussion of this subject, I am presuming that with the present-day knowledge of radiant energy and the physical laws which govern it, whether this energy emanates from the sun or an electrical source, no progressive medical man can longer deny that radiotherapy has come to stay Even the shrewd merchant in the commercial field has perceived its popularity and has named his goods, "Radium Diamonds," "Violet-Ray Lotions," "X-Ray Corn Solvents," etc

Radiotherapy is no longer an experiment, and the proved field is becoming more and more widened until all departments of medicine have had to give it consideration

Surgical diagnosis without the aid of the Roentgen ray is an antiquated art Medical diagnosis and treatment with some form of this energy has become a matter of daily routine, though perhaps to the dermatologist these agents lend their greatest therapeutic aid

The forms and sources of radiant energies which are being used by dermatologists are so numerous that I shall be able, within one paper, to mention but few Of these perhaps the most commonly used are the Finsen light, violet ray, high-tension current effluvia (commonly though incorrectly called the violet ray), radium, and the Roentgen or x-ray

I have not had personal experience with the application of the Finsen ray or with a strong potency of radium, therefore I shall leave the discussion of these two agents to others who have had sufficient experience and await their tabulated results So far, however, as I have been able to observe recorded cases, I am convinced that the physiologic and histologic effects of both of these agents are not unlike those of the Roentgen ray, except that each differs from the other in potency and in the periods of time required to produce like changes in cellular life In fact, the effects of the Finsen ray, violet ray, high-tension effluvia, radium, and Roentgen ray, when applied to the skin for different periods of time, give reactions which are so nearly alike that it has seemed convenient to divide these effects into the same divisions which have previously been applied to the effects of the Roentgen ray alone

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* Read before the Section on Dermatology at the Sixty Sixth Annual Session of the American Medical Association, San Francisco, June, 1915

1 When one of these agents is applied directly or in near contact to the skin for a period, we note, when the reaction becomes visible, quoting from Tousey "a stimulation of the sympathetic nerves, a pouring out of the blood plasma, increased oxidation, and metabolism"

2 When a greater degree or longer period of application has been given, we note an increase of each of the first-named changes, with the additional increase of hyperemia, elevation of temperature, and a beginning of cell degeneration with a slight exfoliation of the superficial layers of the skin

3 If the application is continued longer or in a still more intense degree, we note an exaggeration of all the second-degree symptoms, with the beginning of an inflammation in the delicate lining membranes of both the blood and lymph channels, producing an obliterating endarteritis and lymph block throughout the area receiving the direct rays This may be of such degree as to cause a complete death and slough of the tissue These degrees of reaction more correctly describe those which are produced by radium, violet ray and Roentgen ray

The reactions, following the application of high-frequency effluvia (that is, the violet-colored light with its shower of sparks produced by the passing of a high-tension current through a glass vacuum electrode) of fulguration (the hot spark of the same current when allowed to leap from a pointed electrode), and of diathermy (the intense heat of the tissues which is produced by the double or bipolar high-tension current placed in contact with the surface of the lesion on opposite sides) are similar to the agents named above, though they produce their reactions *immediately* following their application

It is a demonstrable fact that cellular life is stimulated and metabolism increased within the first degrees of reaction, while within the second and beginning third degrees cell life undergoes degenerative changes, the pathologic cells degenerating at an earlier period and with more rapidity than the normal cells To this law we owe the successes accomplished in the treatment of malignant and other pathologic growths, also, may I suggest, in the first degree or its effects is found, no doubt, the secret of many of our failures

Then, as already implied, I believe that whenever we have more carefully studied the histopathology of diseases to be treated, and acquired a more accurate technic of application, we shall more nearly agree as to the value of these energies and have our efforts more commonly crowned with success in the treatment of a certain class of superficial malignancies and diseases of the skin

I have often longed for the time when skin diseases might possibly be classified with reference to their etiology, histopathology, etc, so that we might study these methods of treatment more systematically and be able to present them to medical students in a more intelligent manner I have in recent months undertaken such a classification, and though as yet it is tentative, it coincides with my experience in the application of electrotherapeutic methods These conclusions are based on an experience of nearly thirteen years with the use of one or more forms of these energies, the last seven years being devoted exclusively to dermatology and electrotherapy

Under the first division or class of skin diseases, I have placed those which have not been favorably influenced by the application of radiotherapy, except in the region of its local application These diseases constitute a class whose etiology is yet unknown, though they are supposed to have their origin in some toxic product which has been absorbed or has failed to be eliminated by the internal organs, whose function it is to act on them, such as dermatitis herpetiformis, the different varieties of erythemas, the lichens, psoriasis, etc By way of parenthesis permit me to say that since hearing Dr Rosenow's report on his discoveries in erythema nodosum, I have been making radiograms of the teeth of a number of these patients and have collected strong evidence tending toward a conclusion of focal infections as a possible etiology in many of this class of diseases, but I am not yet in a position to report on these cases

Under a second division, I have named a class of diseases which appear to be an inexplicable derangement or condition of the superficial glands, nerves, or of metabolism within the cells, no doubt internal or central in origin, which are favorably influenced by some form of radiotherapy, though with few exceptions they are best relieved by medicinal means combined with some form of radiant energy Among there are such as hyperhidrosis, pompholyx, pruritus, prurigo, herpes zoster, most forms of eczema, etc

In a third class I place most of those diseases which are superficial in origin and are due to local infection of a micro-organism of some variety, such as acne vulgaris, staphylococcic and streptococcic infections, erysipelas, and practically all the mycoid and fungoid infections of the skin, including the tineas, blastomycosis, sporotrichosis, etc A large percentage of this class will yield nicely to one or more forms of the radiant energies without the use of medicinal applications, though in most of these cases I would prefer to use a combination of medicinal treatment and radiotherapy

In a fourth class I shall place practically all lesions or diseases which are characterized by an increased development of pathologic cells, whether of a benign or a malignant nature, such as fibroma molluscum, rhinophyma, keloids, superficially located epitheliomas, etc

I believe that most of the above-named classes of lesions are amenable to some form of radiotherapy alone, if this is applied with intelligent and cautious technic in the earliest stages of the development of the lesion

Briefly reviewing, then, and speaking more specifically with reference to a few of the above-named classifications, I believe that an attempt to treat a class of skin diseases which are evidently systemic in origin, whether of a toxic or infectious nature, by radiotherapy locally applied, may give some temporary relief, though it is like an attempt to destroy the life of a serpent by beginning at its tail These agents therefore, can be recommended only as one of the aids of dermatologic therapy I have found the Roentgen ray in the treatment of hyperhidrosis, dyshidrosis and several forms of eczema an almost indispensable aid if pushed to a point of first reaction in the first series of treatments, though without other or medicinal treatments these eruptions are prone to recur The Roentgen ray has given me valuable aid in the treatment of all forms of pruritus and in one case of true prurigo I have been entirely successful

Perhaps the most remarkable effect observed on any disease under the second classification is the almost certain relief from the lancinating and burning pains, so characteristic in herpes zoster, which occurs when the high-frequency effluvia is vigorously applied over the trunk and superficial nerve supply of the parts affected This relief sometimes comes immediately following only one application

In view of the clinical reports of the treatment of tineas with the Roentgen ray by Sabouraud several years past, it is unnecessary to comment on my own verifications of it, since most of you have doubtless experienced the same gratifying results

Notwithstanding the fact that the treatment of acne vulgaris and acne rosacea by Roentgen ray has been disparaged by many dermatologists as dangerous, and giving unsatisfactory sequelae, etc, I have continued to use this most valuable aid as a routine for ten years in the treatment of these diseases and in not a single case as yet have I had cause for regrets

Erysipelas has long been known as a local and superficial infection with systemic products With this in mind I began, in 1910, to treat the early manifestations of this disease by a single series of Roentgen-ray exposures and after treating a number of cases, beginning at an early stage of the disease, I am fully convinced that it is a most valuable aid Indeed, in some of these cases, I noted after either a single or a second exposure an immediate flushing of temperature, which, however, subsided within from two to six hours, with an abating of all symptoms and an uneventful recovery

Of the fourth classification, perhaps the most uncertain results I have obtained have been in the treatment of the different varieties of sarcomas by radiotherapy This class of malignant growths has not proved a very favorable one to treat by radiotherapy alone No doubt this is due to their channels of absorption, the blood vessels, which are not rapidly and quickly blocked without an unusually strong treatment With this exception, I have found the treating of this class of lesions by fulguration, diathermy, or Roentgen ray one of the most successful and satisfactory phases of all my work, and furnishing an unbounded field for dermatologic practice

The treatment of superficial epitheliomas before the stage of well-developed metastasis has been a large part of my practice and I cannot refrain from reporting a few of the totals and percentages briefly gleaned from my records of the past few years

For these cases and for most valuable assistance rendered in the treatment of them I am much indebted to my many professional friends of Oklahoma and other states, and to my associate in practice for the past six years, Dr M M Roland The length of this paper will not permit more than a statement of totals, without comment A number of years have elapsed since treating my first case of epithelioma with the Roentgen ray, and it is therefore impossible at this time to trace the after-history of all of my early cases Therefore, taking our records consecutively for the last seven years, we have been able to trace 177 cases of epitheliomas of different varieties and located superficially on various parts of the body In a large number of these cases the diagnosis was verified both microscopically and clinically From this number we have to deduct fifteen cases in which the patients have later died of the same disease or have had a recurrence, and we count them as Roentgen-ray failures This leaves 162, or 91 per cent, in which the patients are now living with no evidences of return

We have learned that epitheliomas located on the hands and on the alae of the nose, just at its fold on the cheek, perhaps owing to a greater mobility and irritation, are of an uncommonly stubborn nature, and five of our failures have been in such cases If therefore, we had subtracted the cases at these particular locations, we should have 94 per cent living instead of 91 per cent of those treated by Roentgen ray alone on selected locations

And now, you may say, what of the much-discussed location of epitheliomas on the lips? We have traced twenty-seven consecutive patients who were treated by the Roentgen ray alone during the past seven years Of this number, twenty-two, or 81 per cent, are still living without recurrence Some of these were treated five and some seven years ago, and we have no doubts that a majority of these are entirely well

It may be said that no such record can be made except in select cases This I admit, although in a number of these cases the lesions were well-developed indurated growths as large as a hazelnut or larger, and one of these cases had perceptible evidence of metastasis in the submaxillary region Most of them, however, were those, as above mentioned, in which treatment was begun before evidence of metastasis, and had not more than one third of their surface covered by the mucous membrane

In conclusion, then, I shall say that my experience with the use of radiotherapeutic agents in skin diseases has taught me

1 It is necessary to look carefully into the pathology and etiology of a disease before attempting to treat by one of these methods

2 These agents are valuable aids in the treating of a certain class of skin diseases when combined with medicinal and other methods

3 There is a class of skin diseases, chiefly local in origin, which can be treated by radiotherapy more successfully than by any other method

4 While the treatment of malignant lesions with these energies is much abused by the unskilled, yet we are coming to recognize that radium and the Roentgen ray, when properly administered in a selected class of cases, have proved themselves superior to all other methods which have been used to the present time

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS MACKEE AND LAIN

Dr Richard L. Sutton, Kansas City, Mo The results attained by these two speakers have done much to convince me of the value of the massive dosage method In order to avoid disastrous results, however, great care and a considerable degree of skill are necessary I well recall a recent instance in the practice of a colleague in which this method was employed in the treatment of a case of ringworm of the scalp A severe burn resulted, and extensive skin grafting was required to correct the ensuing deformity With regard to the prognosis in cancer of the skin, I have found carcinomas involving the mucous membranes, the lower lip, the cartilage of the ear, the parotid region, and the backs of the hands to be the most dangerous

Dr **Ernest Dwight Chipman**, San Francisco I remember reading the discussion of Roentgen-ray treatment at a meeting in New York in which some one expressed the view that in New York the Roentgen ray was no longer seriously regarded as a therapeutic agent in dermatology It seemed to imply that we poor souls in the provinces who still use it are hopelessly behind the times I am glad Dr MacKee's paper does not confirm this notion Dr MacKee expresses dissatisfaction with small doses and we all must have corroborated that idea in our own experiences I have noted not only in epitheliomas but also, and particularly, in psoriasis, that while one gets a temporary recovery, recurrence takes place, and the recurrence is more difficult to get rid of than the original trouble. I may have misunderstood Dr Lain in his reference to erysipelas, I gathered from his paper that the Roentgen ray was a parasiticide, which I have never believed and which I would be glad to hear him explain

Dr. **Douglass W Montgomery**, San Francisco In epithelioma I like to curet out the neoplasm to get down to the base, and I do that because I believe the Roentgen rays do not act very deeply Furthermore, there is no object in sparing the diseased tissue After scraping away the diseased tissue I burn the base with a good penetrating caustic. This serves two purposes, it eliminates any cancerous tissue that may still remain, and it seals the wound against infection This gives a cleared base on which the Roentgen rays can best act effectively Dr MacKee mentioned that in the previous discussion

Dr MacKee mentioned a most interesting and difficult matter when he spoke of warts under the nails We have had now for a long time a girl under our charge with sweating palms and with most persistently recurring warts of the volar surfaces of the fingers The sweating persisted and the warts recurred even after the employment of Roentgen rays Some assert that flat warts, verrucae planae, may be removed by Roentgen rays but I do not see why Roentgen rays should be used on flat warts, and I think it is better to treat them with the curet and strong acetic acid

Dr. **H H Hazen** Washington D C. During the past winter I have been doing Roentgen-ray work as done by Dr MacKee, and I want to say it has been the biggest gain in therapy that I know There is no more comparison between the old and the new methods of using the Roentgen ray than between any other widely separated things

It seems to me it might be theoretically dangerous to curet a cancer before using the Roentgen ray I think the best thing to do when you want to get rid of the surface is to use the electric cautery That opens up no channels

I was interested in Dr Lain's statement that he cured 90 or 91 per cent. in a group of epithelioma Were those cases followed up by Dr Lain for a period of five years? We had no statistics over this five-year period in Roentgen-ray work, but I hope that Dr MacKee and Dr Lain and others using the Roentgen ray will publish their results We need in the worst way those results, in order to compare them with results obtained by surgical procedures

Dr. **Harry E. Alderson** San Francisco The reason we hear of different results from the use of Roentgen rays in the hands of different men is that there is no common standard of measurement of the dosage in use. I think very often great chances are taken by individuals in attempting to apply the Roentgen ray without using any of the known means of measuring the doses Should burns result from such unmeasured doses there is no doubt in my mind that legal action could be successfully conducted against the operator The fact that half-way measures in the treatment of epitheliomas are extremely dangerous cannot be too strongly emphasized Either the knife should be used thoroughly or the ray intensively, or both should be used We prefer the knife and afterward the ray Most of the cases of extensive epitheliomas that we see are in patients who have had the early lesions treated with the various 'half-way measures' advocated from time to time

Dr. **George M MacKee**, New York I prefer to curet the nodular type of basal cell epithelioma If this is done a cure can usually be effected as a result of a single erythematous dose of the Roentgen ray I do not curet the squamous cell type of epithelioma

Regarding the parasitic or germicidal action of the Roentgen ray, it is the general consensus of opinion that it has none. We know, for instance, that a very small amount of Roentgen ray will sometimes cure sycosis vulgaris, but this prompt action is probably due to a modification of the soil rather than to direct action on the bacteria

Dr. **Everett S Lain**, Oklahoma City Dr MacKee answered Dr Chipman's question, only I wish to add that by blood count following the Roentgen-ray treatment, that is, a count within from thirty minutes to two hours, you will note in most treatments, quite remarkable changes in the count of the red and white corpuscles You usually have an increase in the leukocytes There is no doubt to one who has made the test, that indirectly the Roentgen ray does serve as a parasiticide Dr Hazen asked how long we followed these cases I said in my paper that they covered seven years I might have included in that nearly 200 cases that antedated that period These cases I did not have time to trace after I decided to write this paper About 20 per cent. of the reported cases have been treated in the past two years About 60 per cent. prior to that time According to former statements of surgeons, that is a good test of a cure. We believe these patients are well However, we can allow a reduction of the percentages and yet have a fair percentage of recovery

Dr. **H H Hazen** What percentage of five-year cures have you had?

Dr. **Everett S Lain** I cannot give the figures without looking up my records, but making a guess, I should say not less than 35 per cent, excepting those on the hands, which as I said have been uncertain

MODERN TREATMENT OF FRACTURES OF THE LONG BONES FROM THE ORTHOPEDIC POINT OF VIEW

WITH CLINICAL OBSERVATIONS AND CONCLUSIONS *

J W COKENOWER, M D

DES MOINES, IOWA

The treatment of fractures of the long bones has been given much attention during the past few years, by the general and orthopedic surgeon, relative to the closed and open methods and the use of nails, wire, plates and bone grafts No matter how scientific and modern the work, and how successful the results obtained, it is absolutely necessary that the bones be immobilized and held in position by some kind of mechanical appliance whether the treatment be open or closed, or both As orthopedic surgeons give more attention to the latter than surgeons do, it would be but natural to conclude they were as able, if not more so, to do such work with better clinical functional results

The direct fixation of compound fractures, when the bones are exposed and cannot be held in position by splints, has come into general use by surgeons of large experience, but when the matter of simple fractures is presented for consideration, there is a lack of uniform opinion, whether the fixation shall be by open or closed method

The difficulty of the open method in many cases, the unsatisfactory adjustment of fractured bones by manipulation and the uncertainty of fixing and maintaining the broken ends in perfect alignment, prompts one to decide in favor of the open method, augmented by such orthopedic mechanical devices as will sitively hold in perfect position the fracture

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Sixth Annual Session of the American Medi
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That this is the best treatment no one will doubt, when done by a good surgeon with operative and mechanical skill backed up by perfect asepsis, and any lack of the latter is more fatal to perfect union than a similar error in technic in abdominal surgery, for in this the lymphatics are less able to cope with ordinary infections, than in the peritoneal cavity, and in no other domain in surgery are aseptic errors so often punished by failure

It is necessary to divide our simple fracture cases into two groups those that can be treated in a hospital and those that can not The greater number of cases have always been treated by the general practitioner, and his functional results are usually good and satisfactory to the patient, even though a roentgenogram may show an imperfect alignment and defective judgment, hence, the general or orthopedic surgeon can never hope to control the exclusive management of fractures and the open treatment can never become universal

It would not be advisable to do an open operation in all simple fractures because many of them can be perfectly adjusted by manipulation, under anesthesia, and accurately held in position by proper retentive dressings A Colles' fracture of the wrist can nearly always be reduced if the fragments, which are often impacted, are unlocked by increasing the deformity before attempting reduction A Pott's fracture of the ankle joint will often be set with a snap if traction is made in the line of the deformity, and many transverse fractures of the femur show little tendency to displacement when proper mechanical appliances are used

Therefore the most enterprising surgeon would hardly be justified in stating that all simple fractures should be treated by the open method, even in the face of Sir Arbuthnot Lane's statements that they should, and he uses in all his open operations the same external retentive and fixation appliances to reinforce the strength of his plates, screws and clips, that are used in the nonopen treatment

The fixation appliances used in the open method can be depended on only for a few days, because of the pathologic softening of bony structure surrounding the peg, screw or wire, and the bones become loose unless augmented by a carefully applied external splint This fact of softening has been found in cases in which the open method has been resorted to in from ten days to six weeks after the fracture and the ends of the bones were too soft to hold the pegs or screws This softening, on investigation by the Roentgen ray, at different times proved to be a pathologic one, which accounts for the many cases of nonunion of bones that had been accurately adjusted and properly retained

Hence, if it should be found that reduction cannot be accomplished in the usual way, or that coaptation cannot be maintained, the open or operative method should at once be resorted to before the bones have undergone reparative softening

The fact that screws and wires do not maintain and hold until bony union is complete has been shown in all cases in which it became necessary, early or late, to remove them, either from infection or because of detachment because of softening bony structure

I have used the bone-graft treatment of Drs Murphy and Albee and obtained good results in all cases of nonunion wherein such treatment has been used, especially when the inlay of grafts is cut and inlaid in such a manner that each stratum of periosteum and bone of the fracture meet and approximate a like stratum of the graft introduced This can usually be done, after which not only will union occur, but the individual cells of both graft and bone will be stimulated, and overgrowth and callus formed with strength equal to, or exceeding that normal to the part

It has been found that when an open operation was attempted in from two to four weeks after injury, in cases of oblique and in some cases of transverse fracture of the femur, leg, arm and forearm, with tendency to overlapping, that it was difficult and sometimes impossible to overcome the muscular contraction When this occurs an open operation should be done, as soon as the patient can be brought into favorable environment, because this is the class of cases that give most trouble and this condition is the cause of nonunion

It has been my custom to give an anesthetic in all cases in which manipulation is too painful or muscular rigidity is marked and endeavor to secure crepitus, if possible, that I may be more certain that no muscle, fascia, or loose fragment of bone is interposed between the fractured ends of the bone While it may be true that nonunion is often due to defective innervation, diseases of the bone, syphilis, or excessive rarefaction, we must admit that a defective relation of the fragments is the prime factor to be considered However, an entirely different condition may produce nonunion because of a lack of proliferation of soft and bony cell tissue

I have seen several cases in healthy and vigorous young persons in which there existed little or no displacement, and in which immobilization was easy and complete, that ended in nonunion, due, no doubt, to a restricted local reaction and defective hyperemia with insufficient nutritive and reparative local reaction, which easily yielded to vigorous friction of the ends of the bones

The fear of converting a simple and noninfected fracture into an open and possibly an infected one was so great that, rather than take the chance of creating an infected compound fracture, one was willing to take some chance of obtaining a fairly good functional result, even though the Roentgen ray might show imperfect apposition Hence, we are no longer able to cover up our mistakes because the Roentgen ray will show them My experience has been that when the Roentgen ray shows that the bones were in proper apposition in the beginning and union complete in the end of treatment, and that no mistake has been made, no matter how seemingly unsatisfactory the results were before this knowledge was obtained, the psychologic as well as the physiologic functions always improved afterward

I have used the two extremes in the open and closed methods of treating fractures, but my functional results were not always satisfactory, which prompted me to use the medium and extremes conservatively Since doing this not only were my functional results more satisfactory, but the general contour, in the normal axis of the limb, was better, which prompted the following conclusions

1 All fractures that can be adjusted manually and can be fixed in a position that will insure a good functional result, even though the Roentgen ray shows a lack of perfect end-to-end approximation, are to be treated by the closed method

2 In all fractures with marked deformity, such as overlapping, angulation, lack of contact of fractured surfaces, evidence of soft or detached osseous tissue between the ends of the bones, and especially compound fractures when it is apparent that union will not take place, the open method is invariably used

3 The open method being used, I prefer the Lane plates, when sufficient smooth bone surface for their attachment can be obtained When this cannot be done, prepare the ends of the bones for good and satisfactory apposition If not sufficiently jagged make at least one lateral and one anteroposterior dovetail in the ends of the bones to prevent them from displacement, after which wire, and if proper retentive appliances be used good results should be expected

4 The bone-graft inlay should always be used in nonunion, especially when the pathologic softening of the ends of the bones exists augmented by infection or misplacement of the ends, including soft tissue between them, but not in simple fresh fracture or fractures, to which the Lane plate will be better adapted

5 The mechanical immobilizing support must be satisfactory, otherwise previous preparation, no matter how good, will be a failure No rule can be made for the use of plaster of Paris and splints, except that the former should not be used when any swelling is present and should never be left on too long, because atrophy of the soft tissue may do the immobilization harm, but splints, when properly made and adjusted, are always satisfactory

6 The Roentgen ray should be employed early whenever possible, to aid in a proper estimation of the extent and location of the fracture, to determine whether the open or closed method should be used, and if the former, it should be done promptly The Roentgen ray should again be used, when the patient is discharged, for anatomic and functional reasons

Utica Block.

ABSTRACT OF DISCUSSION

Dr. Roland Hammond, Providence, R. I I agree with most of what Dr Cokenower said I believe that as orthopedic surgeons we have a great opportunity in the treatment of fractures The orthopedic mind naturally inclines to the solution of mechanical problems such as are involved in the treatment of a fracture. There are three requisites necessary in the treatment of a fracture (1) a complete Roentgen-ray study of the fracture before and after reduction, (2) the use of anesthesia in practically every case, and (3) at times a consultation We can no longer treat a fracture according to textbook methods Every case is a separate study according to the conditions as shown by the Roentgen ray In treating a fracture I always make a roentgenogram so as to show what the condition is Then under ether I reduce the fracture. Take a plate while the patient is still under ether, and if it shows proper reduction, put the fracture up If not, I keep on until I have proved that the fracture can be reduced by further manipulation, or that it cannot be reduced and may require an open operation I think a good many of the fractures of the long bones, especially of the femur are not properly reduced, because countertraction is overlooked Traction is employed, but countertraction is not, and in setting a fracture of the leg, especially of the femur or of both bones, if the limb is put on to a frame where traction can be applied with a windlass, with counterpull in the perineum, you can put on the plaster or whatever apparatus you choose to employ, without depending on an assistant to hold the leg The windlass will hold the part firmly so that the plaster can be properly applied I disagree with Dr Cokenower as to the use of Lane plates I believe in most cases they can be dispensed with, and if any form of fixation is to be used, it is much better to employ the bone graft I think with proper external fixation most fractures can be held, but the metallic internal splint has already given too much trouble in this country to warrant its further use, except in very exceptional circumstances

Dr. Roland Meisenbach, Buffalo I wish to bring before the section's notice a point which I have observed in connection with fresh fractures and anesthetics, namely, the fact that with nitrous oxid and oxygen as an anesthetic, one does not get complete relaxation, that is, the muscular tone remains fairly tense This is of great value in setting a fresh fracture, either with or without incision, namely, the semicontracted muscles tend to hold the fragments in place and act as a lock, as it were, whereas, if an ether anesthetic is given, complete relaxation will often tend to a flail-like condition at the point of fracture. If you can reduce your fracture without complete relaxation, in many places you can approximate it and it will hold. I think this also accounts for the fact that many fractures, especially of the wrists, are successfully reduced without an anesthetic.

Dr J W Cokenower, Des Moines, Iowa I cannot agree with Dr Hammond that it is necessary to cut down and use a bone graft in a healthy bone or fresh fracture and one that can be put in apposition It certainly ought to be held in position by the proper mechanical appliances, so that bone grafts as well as Lane splints are the proper things only in properly selected cases With the attention that orthopedic surgeons of this country have given to bone surgery, they are absolutely and justly entitled to treat fresh fractures, and in doing so there will be less trouble afterward and much less litigation I believe that the time will come when a majority of fresh fractures will be referred to orthopedic surgeons, because in the end, results are to be considered and the public is the umpire of our work. I think they will decide in our favor, because we are able to do the work and do it right.

PAINFUL FEET

CAUSES AND TREATMENT *

HENRY W FRAUENTHAL, A C, M D

Fellow of the American College of Surgeons Physician and Surgeon in Chief, Hospital for Deformities and Joint Diseases
NEW YORK

In discussing the causes of painful feet, I have selected those forms which numerically are most common As, in the majority of joint conditions, the advice of the orthopedist is sought after the condition becomes chronic, so, too, in painful conditions of the foot, we are not applied to for advice until the condition has gone on for some time and becomes so painful that locomotion is too difficult to be tolerated

I wish to call attention to the great frequency of foot infections secondary to focal infections in other parts of the body, as in the teeth, gums, mouth, throat and nose, also after grip, pneumonia, typhoid fever, etc, as I have found these to be the cause of the largest percentage of painful feet in adults and children, in the cases examined at the Hospital for Deformities and Joint Diseases during the past two years

This idea can best be presented by quoting from the recent article by Dr Lovett[1] of Boston In his report of 800 nurses with painful and flat feet in the Massachusetts General Hospital, Dr Lovett states that "the onset was frequently after grippe, tonsillitis, or acute illness of one sort or another" Now, when infection of the feet which involves all the soft tissues, muscles, tendons, bursa, ligaments, etc, results the ligaments sustaining the arch become relaxed, and unless some fixation support is used, there will be a stretching of the ligaments and breaking down of the arch of the foot, which may or may not continue to be painful

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* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association San Francisco June 1915

[1] Lovett R W The Superstition of Flat Foot The Journal A M A April 10 1915 p 1208

A similar process is overlooked in children after *tonsillitis, measles, scarlet fever, etc* I hope that in the future, when secondary results are looked for in the heart, physicians will investigate the muscles supporting the foot, and when children complain of later rheumatic pains in the foot and legs, proper preventive measures can be used to avoid the later chronic foot trouble

Our present efforts must be to seek the primary focus of *infection and aim at its eradication, after* measures for the fixation of the foot and temporary support of the arch have relieved the symptoms and been productive of partial cure

To treat this condition properly, a plaster cast supporting the arch and retaining the foot in a fixed position is the most perfect splint

The strapping after the method of Ochsner[2] is also an efficient means of fixing the foot and sustaining the arch

The Whitman[3] plate, as a support and fixation, has its value This is also true of other arch supporters But the too long continued fixation by metal arch supporters results in atrophy of the interosseous muscles, fat, etc, owing to their nonuse The hardness of the metal is objectionable, as it develops callus of the skin and periostitis of the bones

When the inflamed foot is neglected or not properly treated, the inflamed agglutinated surfaces fuse together, and we have the fixed or static foot, in which there is no motion between the small bones This type of foot is most unsatisfactory to treat I have obtained the best results by heating them in dry air from 250 to 400 F by means of a Tyrnauer electric baker, and then manipulating and massaging them I will cite a few cases showing types of focal infections

Case 1—*Infectious arthritis from infection of gums*—Mr F H, a detective, referred by Dr Austin Holles, New York, applied at the Hospital for Deformities and Joint Diseases complaining of flat and painful feet For two years previous, he had been treated for his painful feet by various types of foot plates given him at the advice of different physicians *In the past three months,* his pain had become so acute that it was impossible for him to get about with the aid of a cane, and he was incapacitated from attending to his work The appearance of his feet made one suspicious of an infectious arthritis The Wassermann test for syphilis was negative, the agglutination test for gonorrhea was also negative An attempt to determine the focus of infection revealed infectious pyorrhea of a number of the roots of the teeth As this resembled the type of case in which symptoms have been benefited and relieved by sterilization of the gums and cleaning up of the deposits in the roots of the teeth, this method of treatment was pursued in this case

Although the arch of the foot had decidedly broken down, and the Roentgen ray showed evidence of the infectious process, after two weeks' treatment the patient's symptoms of pain had all disappeared, and for the past four months he has been able to attend to his business, and is free from pain, he has also discarded his arch supporters and his cane

This is an illustrative case of many which have been relieved of all the painful symptoms after the sterilization of pyorrhea infection I hope that infections of the teeth will be given consideration in future examinations of painful feet

Case 2—*Infectious arthritis of the feet from infection of tonsils*—Mr M S, aged 28, bookkeeper, with no venereal history, does not drink spirituous liquors, smokes *one dozen* cigarettes daily About six weeks previously, patient had an attack of acute tonsillitis, about two weeks following the feet were painful and swollen, a few days later, the swelling subsided but the pain continued and grew worse Owing to the pain and difficulty in walking, he was referred to the Hospital for Deformities and Joint Diseases by his family physician Examination revealed the tonsils inflamed and enlarged, and the patient was referred to Dr Julius Auerbach, the throat specialist of the institution, who coincided in the opinion that the throat was undoubtedly one of the sources of infection The patient was then referred back to his family physician with our opinion and the advice that the tonsils be removed This was done at the hospital by Dr Auerbach, March 4, 1915 For the next two days, there was increased pain and tenderness in the feet which gradually subsided, and for the past three months the patient has remained well and is free from all pain The microscopic examination of the tonsil shows streptococci

INFECTIOUS ARTHRITIS OF THE FEET FROM NONGONORRHEAL LEUKORRHEA

There is a special class of infectious feet found in married women between the ages of 20 and 40 that are of great interest Patients are negative to Wassermann and Noguchi tests and also negative for the agglutination fixation test There is a vaginal discharge and often laceration of the cervix for lymphatic absorbtion We fail to find gonococci in repeated smears

The feet are slightly swollen, tender and painful to walk on I have been able to cure a number of these cases by antiseptic douches of mercuric chlorid and iodin solutions

The following case is illustrative

Case 3—Mrs B, aged 32, married at the age of 22, had three children and no miscarriages She had some vaginal discharge following birth of second child five years ago, continued after birth of last child two and a half years ago, no increased temperature or illness after any of her confinements For the past two years she has worn arch supporters for painful feet, with little relief of symptoms When patient was first examined by me, Nov 18, 1914, her feet were somewhat swollen and very tender when walking There was a suspicion of neisserian infection from their appearance, several examinations were made of the discharge, but no gonococci found Her husband denied venereal history, an examination of his urine and prostatic secretion was also negative Patient received vaginal irrigation with 1 5,000 mercuric chlorid solution three times a day In five days the symptoms in the feet began to improve and in two weeks had all disappeared The patient has gone about with ordinary shoes without arch supporters and has remained well ever since

This is one of a class of cases of nongonorrheal vaginal infection

OVERTAXATION AND NONUSE OF MUSCLES

In addition to the class of feet that are weakened by infectious process, we have a second class that occurs in policemen, motormen, salesmen, pedlers, etc, who, owing to their standing for long hours, overtax the muscles that support their arches

A similar condition is often brought about by the sedentary occupation of men and women, and by the nonuse of the muscles, an atrophy taking place in the anterior and posterior tibial muscles, resulting in a letting down of the arch of the foot, together with pain in the arch of the foot about the external malleolus, the pain often extending to the insertion of the internal lateral ligaments of the knee, we also have pain in the hip joint, occasionally in the small of the back and often between the shoulder blades

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[2] Ochsner, E H Potential and Acquired Static Flat Foot, The Journal A M A, Nov 23, 1907, p 1742

[3] Whitman Med Rec, New York, Aug 13 1907

In the latter class of cases, much benefit can be obtained by having the patient go through muscle exercises and the use of the Zander apparatus, which develop the muscles that hold up the arch of the foot, and by having the patient bear the weight of the body on the outer side of the foot, this can be aided by building up the inner border of the shoe from one-eighth to one-fourth inch and attaching a Thomas projecting heel, and the patient walking so that the inner borders of the feet are parallel

In this class of cases, if arch supports are needed, I use felt pads shaped to conform to the arch of the foot, with sufficient thickening to give proper support and elevation until the muscles are developed to support the arch of the foot properly

GONORRHEAL INFECTIONS OF THE FEET

In considering the various causes of painful feet, I do not think that a proper amount of consideration has been given to the neisserian infection, when we consider that about 60 per cent of the male population acquire the infection The trouble in the feet may occur in the first week of the infection It may appear years after the original attack from a focus in the prostate and seminal vesicles of the male, or from the tube and ovaries in the female, producing periostitis, bursitis and spurs I have experienced some unlooked for surprise from making a uniform agglutination fixation test in acutely inflamed feet Roentgenoscopy reveals the rarefaction of the bones and spurs

Cases 4 and 5 are striking illustrations

Case 4—Mr M, the proprietor of a drug store, had feet which were painful on walking and on pressure, tender and swollen He had been treated by various consultants in the past two years with all forms of antirheumatic treatment without any benefit In my judgment, his feet had the appearance of neisserian infection When I made this suggestion to the doctor, both the doctor and patient became very indignant, as the patient had been married eight years with two healthy children At first, the patient objected to examination, but later consented A large inflamed right lobe of the prostate was found, and from the secretion expressed and sent to the laboratory, active virulent gonococci were found Under appropriate treatment, massaging of the prostate and protargol irrigation, the pain in the feet entirely disappeared and the patient made a perfect recovery and is able to go about in ordinary shoes

Case 5—Man, aged 23, chauffeur, had gonorrhea at the age of 14 Owing to a painful heel at the age of 18, a roentgenogram was taken which showed spurs, he was operated on and the spurs removed, pain was not completely arrested and a second operation was performed, when the pain disappeared for four years, but reappeared He applied at the Hospital for Deformities and Joint Diseases History of last attack of pain in the heel dates back to two months when he began to suffer pain in both heels extending over the malleoli, arches weakened, movements limited, especially dorsal flexion and adduction He still had a morning drop, urine shows presence of gonococci Roentgenoscopy reveals a new outgrowth of bone over the area previously operated on also spurs Patient is now under treatment by massage of the prostate, irrigation with protargol and autogenous vaccines, later an operation will be performed

TUBERCULOUS INFECTIONS OF THE FOOT

This is found most often in children, appearing gradually with some swelling and pain, local tenderness on pressure, and the child shows a slight limp Later the swelling increases and there is a breaking down of the infected area The Roentgen ray shows rarefaction and breaking down of the small bones, the von Pirquet is generally positive, and an excess of acid-fast bacillus is found in the feces

I have been successful in curing a number of such cases by the building up of the general health of the patient, and soaking the affected foot in hot water for one hour three times a day, we thus obtain a primary hyperemia from the hot water, and a secondary one when we replace the water pressure of 62½ pounds to the square inch by the atmospheric pressure of 16 pounds, thus keeping up the hyperemia for some hours

SYPHILITIC CONDITIONS OF THE FOOT

The periostitis and osteitis of the bones of the foot and gumma of the soft parts are found in congenital and later acquired syphilis, in which we have pain and great local tenderness, which, if promptly treated by our syphilitic remedies, does not break down, but on delay, we may have to resort to surgical procedure

As aids to diagnosis, we have (1) patient's history, (2) finding the *Spirochaeta pallida,* (3) Wassermann test, (4) Noguchi test, (5) the Roentgen ray, showing (*a*) periosteal thickening, and (*b*) a uniform bone shadow of compact and cancellous tissue (first report by the author, 1906), on which a diagnosis should be made without a blood test

For the treatment of syphilitic bone conditions, an intravenous injection of salvarsan is given and repeated every seventh day, from three to six injections being given, after which inunctions of unguentum hydrargyri, 50 per cent, are applied daily If evidence of salivation appears, the mercury is discontinued for a time

Case 6—Mr N H, aged 36, was referred to me by Dr Fishberg, examining physician for all medical cases applying at the United Hebrew Charities, City of New York. Patient had complained of pain in both feet and had been advised to wear foot plates Not having the means to purchase these, he was referred by the doctor to the Hospital for Deformities and Joint Diseases, without his making a personal examination The following history was obtained, Sept. 22, 1913 Six months previous to onset the patient suffered with headaches, which were so severe at night that he was compelled to discontinue his occupation, which was that of a waiter Oct 23, 1913, he had fever and chills during the night, the following morning, he was unable to get up, the left knee was swollen and powerless, he complained of pain when attempting to bend it. He sent for Dr A, who diagnosed the condition as rheumatism and applied black salve (ichthyol), the patient was under his care for four weeks, but the condition remained unchanged, Dr A therefore referred the patient to Hospital 1 under care of Dr B, here he received twenty-one treatments of baking apparatus at the rate of three treatments per week; but as he felt no better, Dr B referred him to Hospital 2, where he came under the care of Dr C in the orthopedic department, this doctor diagnosed the condition as loose cartilage and applied a plaster cast for two months but no relief was obtained Then the patient sent for his lodge physician, Dr D, who diagnosed the trouble as synovitis and tried to tap the knee twice in two places but did not succeed Next the patient was referred to Dr E at Hospital 3, but as Dr E was not there at the time, he came under the care of Dr F, who immediately removed the cast, believing that this would cause ankylosis He cauterized the knee the trouble If we do not cause general improvement, we will always cause local improvement at any rate Another important point to remember is that many of us expect too much from the removal of a possibly diseased focus We cannot expect a joint which has been riddled by disease for years to recuperate and resume normal function, merely because we have removed an infected tooth, *for instance* The fire is over and the damage has been done We must get on the ground with our fire extinguisher at any early hour and not wait until the fire is over

Dr. Roland Meisenbach, Buffalo In considering painful feet, we must remember that there are many causes, whether they be due to anatomic variations, static errors, infections, a lack of tone of the tissues, or following fractures in or near the feet, or a combination of the above. Dr Frauenthal has enumerated many of these in his paper He has, indeed, covered a vast field, and I am sure he will agree with me that he has only briefly touched on many of them The successful treatment of painful feet surely depends on our being able to attack the cause as well as the effect I especially think of the cases in which there may be infection far remote from the feet, that develop painful feet after the severe infection has subsided I am inclined to believe that some of the local infections of the feet occur through the skin, by absorption I do not believe it is possible for one to say dogmatically that plates are of no value I know that there are types of feet that require the proper plates, and that there are other types of painful feet that should not have plates In considering the question of plates, one should remember that plates are applied to feet for two reasons First, to support the feet properly and make them functionate correctly, and secondly, to strengthen the foot structures In order to make the feet functionate properly, the plates must be cut according to the symptoms, as well as to the anatomy of the foot, which are only understood by the surgeon who has studied the case The plate should be of such flexibility that it will bring into play the very muscles or tissues of the foot and leg which the surgeon believes will strengthen the foot. I find that so many are wearing plates of a rigid type, so as to splint all the joints of the foot as well as actually to prevent muscular action This is the wrong type of plate, and is found frequently in the shoe stores Although at first they may give temporary relief, the ultimate result is to weaken rather than strengthen the foot It should be remembered that plates should be applied only as an adjunct to any other treatment which may be necessary, either general or local Even in cases in which we have exostoses or faulty function after fracture, plates may be of great value in obtaining the results

Dr. E A Rich, Tacoma, Wash I should like to ask Dr Frauenthal to state in his conclusion the role that the ordinary plate plays in his work

Dr E. W Ryerson, Chicago I am anxious to be convinced of the value of these light treatments It seems to me, considering the matter from the standpoint of an ordinary, plain thinker, that electric light treatment for these painful osteo-arthritis cases, of which we all see so many instances, is the purest kind of bunk, but if it is true, I want to be convinced, and the recital of a few cases which have been benefited has not particularly convinced me. I should be very glad if Dr Frauenthal would at some future date—say next year—present to us some really convincing scientific evidence of the value of the light treatment There are lights and lights, and a whole lot of people are using this light and that light—and a white light is better than a blue light and a blue light is better than a white light, and personally, I do not know where we get off If there is anything in it, I want to use it, but I have got to be shown

Dr. John Ridlon, Chicago What is that lamp called?

Dr. Henry W Frauenthal, New York Answering Dr Ridlon, the light I use in my office is what is known as a lucodescent lamp What I have my patients use is a small lamp they buy from the Edison Electric Company, costing $8 I try to get the patients in some house wired for electric light. The size of the lamp is of no importance, because you heat the feet up to the highest point of tolerance. I think we have a record of over three hundred cases As a question of diagnosis, a number of these cases I have from time to time shown to Dr Willy Meyer, who was interested in this particular class of cases One of the gentlemen asked me what plate we use at the hospital We do not use any plates We use firm felt cut out to conform to the foot and elevated to support the arch, because it holds up firmly and is springy That does not do for static feet You must manipulate them, and then if you bake them and keep up your massage, some of them get to be fairly good feet. The type of foot to which I want to call attention particularly is that in which the trouble is due to secondary infection In the last year we have observed a great many of these feet, and our class of women with painful feet is almost as large as our class of men They get some relief at first by wearing a plate obtained at a drug store or at a shoe store, and then as they do not get any better, they apply to an institution

THE STABILITY OF THE INFUSION OF DIGITALIS *

ROBERT A. HATCHER, M D

AND

CARY EGGLESTON, M D

NEW YORK

It is generally recognized that the infusion of digitalis deteriorates rapidly, in fact, it is often stated that digitalis and all of its preparations undergo rapid changes Several pharmacopeias, notably the German, French and Swiss, direct that the leaf shall not be kept longer than one year despite the utmost care in its preservation

We have shown[1] that when the leaves are kept with the least care for periods up to twenty-five years, they retain a degree of activity equal to that of fresh leaves of good quality, and that a fluidextract made thirty years previously was quite as active as one of good quality recently made

Digitalis is not completely exhausted in making the infusion by the official process, in which the bruised leaf is directed, hence this process was modified slightly and the infusions used in the present investigation were made as follows Powdered digitalis of good quality was infused on a water-bath for one hour at a temperature of about 95 C This process results in exhausting the powder almost perfectly, as shown by a subsequent test of the marc Incidentally, it may be remarked that three infusions made in this way from the same specimen of powdered leaf during a period of six months showed activities of 97 5, 100, and 102 per cent, respectively, the second serving as the standard

The infusion for the first series of tests was filtered while hot and divided in equal portions Alcohol and cinnamon water were added to one portion according to pharmacopeial directions, and water (in place of the alcohol) and cinnamon water were added to the other, the two representing similar proportions (1 5 per cent) of digitalis

The hot infusions were put in bottles which were then securely corked, the contents being nearly sterile but not absolutely so Several of the bottles that contained infusion made with alcohol were labeled A, and placed in the ice-box, the others that contained the hydro-alcoholic infusion were labeled B, and placed in an incubator in which the temperature was maintained at 37 C Similarly half of the bottles that contained the infusion made without alcohol were labeled C, and placed in the ice-box, the remainder, labeled D, were placed in the incubator

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* *From the Laboratory of Pharmacology of Cornell University Medical College.*

* The present investigation was undertaken at the request of the Therapeutic Research Committee of the Council on *Pharmacy and Chemistry* of the American Medical Association

[1] Hatcher, R A, and Eggleston, Cary Am Jour Pharm, 1913 lxxxv, 203

The activity of the fresh infusion was tested by the cat method after 0 85 per cent of sodium chlorid had been added to it The specimens kept in the ice-box and those in the incubator were tested in the same way after varying intervals of time

The cat method, in brief, consists in injecting the test-preparation slowly and continuously into the vein of a cat until death results The weight of digitalis represented in the fluid used is calculated and is expressed in terms of milligrams of the drug per kilogram of animal weight An amount of the fresh infusion representing 120 mg of the drug was required per kilogram of cat used in the test

When precision in the results is demanded, as many as six animals may be required for each test, because some animals are more tolerant than the average, and a few are unusually susceptible, but since slight changes in the activity of these specimens were not considered important, we used from one to four animals for each test

This explains why some specimens of the infusion actually appear to be more active after having stood for a time, but these discrepancies are slight, and the total number of experiments performed suffices to insure results that are sufficiently accurate for the purpose in view

In a few cases it was necessary to reject the results of single experiments owing to evident gross abnormalities of the animals The following example will serve as an illustration Four animals were used in a test, the figures obtained being 103, 105, 111, and 173 mg per kilogram In this case the calculation was based on the figures of the first three experiments, which were nearly uniform, the fourth animal being obviously tolerant.

In a few cases we were also forced to reject experiments, even though their inclusion would have given our results the appearance of greater uniformity Thus Specimen 3 (Table 3), tested after an interval of seven days, had an activity corresponding to 103 mg per kilogram, which was evidently too high, when viewed in the light of subsequent tests, another test of this specimen made on the same day gave 113 mg per kilogram (agreeing exactly with the results obtained in the last test of that specimen), but we were compelled to reject the higher figure because one of the animals used was subsequently found to be lactating, and experience has shown that many lactating cats are remarkably tolerant toward digitalis

Such irregularities are the exception, however, and in some tests none of the figures varied by more than 2 or 3 per cent from the average In one of these tests the figures obtained were 108 and 109, in another 115, 116 and 119 A typical test, in which four animals were used, gave the figures 105, 116, 117 and 122 mg per kilogram, the average of these four being 115

Table 1 gives the results obtained with the infusions previously described The interval during which the specimen used in a given case was kept in the ice-box or incubator before being tested is expressed in days The amount of digitalis represented in the infusion required is expressed in milligrams of digitalis per kilogram of cat weight The number of animals used in each test is shown by the bracketed figure

TABLE 1—MILLIGRAMS OF DIGITALIS PER KILOGRAM OF ANIMAL

Specimens	Intervals in Days				
Freshly made 120 (3)	3	7	14	21	28
A (alc ice box)		115(2)		129(2)	125(1)
B (alc. incub)	116(2)	128(2)	135(2)	117(2)	154(2)
C (aq , ice box)		123(3)	113(2)	152(2)	149(2)
D (aq , incub)	112(3)	155(2)	160(2)	153(2)	180(1)

Table 2 shows the activities of the infusions expressed in percentages, the initial activity of the fresh infusion being taken as 100 per cent The figures showing the intervals in days correspond to those in Table 1

TABLE 2—ACTIVITIES OF INFUSIONS EXPRESSED IN PERCENTAGES

	Intervals in Days				
Specimens	3	7	14	21	28
A (alc ice box)		104		93	96
B (alc incub)	103	94	89	102	78
C (aq , ice box)		98	106	79	80
D (aq incub)	107	77	75	78	67

The results given in Tables 1 and 2 will be discussed later with those of other experiments

It may be objected that infusion of digitalis is not commonly kept unopened, as our specimens were, hence we decided to subject the preparation to conditions more nearly simulating those found in practice, and also to extreme conditions such as could never obtain even with the greatest carelessness

For this series of tests an infusion was prepared, June 24, 1915, essentially as previously described, except that distilled water was used in place of the alcohol and cinnamon water The filtered infusion was then divided into several portions and placed in bottles while hot These were labeled and kept for various periods of time under the following conditions

1 Allowed to stand uncorked at room temperature

2 Corked but opened three times daily and a small amount removed each time

3 Securely corked and allowed to stand at room temperature during two and a half months of summer The average temperature was 75 5 F

4 About 10 gm of floor sweepings were added to the contents of the bottle, which was then shaken thoroughly and allowed to stand at room temperature

5 About 10 gm of fecal matter from a cat's intestine was added to the contents of the bottle, which was then shaken thoroughly and allowed to stand at room temperature This specimen developed an intensely disgusting odor, with the evident multiplication of micro-organisms

The results of the several tests of these specimens are shown in Table 3 The intervals during which these specimens were allowed to stand were so variable that they are best given for each test, hence the figure under "age" indicates the number of days during which each specimen was kept before the tests The figure under "dose" indicates the number of milligrams of digitalis in the infusion required per kilogram of animal The bracketed figure shows the number of experiments in the test The freshly prepared infusion represented 115 mg of digitalis per kilogram of cat weight

The following experiments, which cannot be tabulated conveniently, may be presented here

An official infusion of digitalis that had been kept stoppered at room temperature (about 70 F) for nineteen days was tested and found to be of exactly the same activity as when freshly prepared After having been opened, it deteriorated slowly A specimen of an infusion was allowed to stand open in an Erlenmeyer flask over a radiator for one month, water was then added to make up for the loss by evaporation, and when tested it was found to be about 50 per cent less active than when freshly prepared Another specimen of the infusion, to which chloroform was added, retained its full activity during a period of eighty days of summer, although the chloroform had completely disappeared when it was tested

The rapid deterioration shown by the specimen which contained fecal matter (No 5, Table 3) suggested the possibility that the colon bacillus might be concerned in the change An infusion that had been prepared in the manner already described was therefore sown with a pure culture of the colon bacillus from the human intestine, 0 5 per cent of Witte's peptone having been added to facilitate the growth of the organism, and the mixture was placed in the incubator for a period of nine days

TABLE 3—ACTIVITIES OF INFUSION OF DIGITALIS KEPT UNDER DIFFERENT CONDITIONS FOR VARYING INTERVALS OF TIME

Specimen. Fresh 115 (4)	Age, Days	Dose, mg	Age, Days	Dose, mg	Age, Days	Dose, mg	Ultimate Loss in Percentage
1 Uncorked	6	122 (2)	13	114 (2)	20	115 (2)	26 per cent in 20 days
2 Opened frequently	8	122 (2)	21	98 (2)			None in 21 days
3 Corked summer temp	7	103 (3)	20	117 (2)	79	113 (2)	None in 79 days
4 Sweepings added	6	104 (2)	13	116 (3)	19	101 (2)	None in 19 days
5 Fecal matter added	5	147 (2)	12	164 (3)	18	194 (3)	40 per cent. in 18 days

At the end of that time it was tested in the usual manner and the activity compared with that of the freshly made infusion It was found to have lost about 10 per cent of its activity While this difference is slight, it is interesting to observe that the activity was determined with a considerable degree of precision both before and after the period of incubation

The following experiment may be described here because it bears directly on the problem in hand, though it was made during the course of an investigation begun about a year previous to the time of undertaking the one described in this paper

Powdered digitalis was mixed thoroughly with an equal weight of water, placed in a glass-stoppered bottle and allowed to stand at room temperature for about six months, at which time it was found to be nearly inert A mold had developed within a few days after placing the moist powder in the bottle

This experiment was repeated in part, the moistened powder having been set aside, Nov 24, 1914 It became moldy within a few days, but when tested, March 20, 1915, having stood about four months, it had lost only about half of its activity, and it is interesting to note that an infusion prepared from this moldy digitalis gave a blood pressure tracing that was typical of digitalis action This is of especial interest in view of the commonly accepted opinion that moldy digitalis, and old aqueous infusions of the drug, develop principles having picrotoxinlike actions

COMMENT

The most striking facts shown by our experiments are that an infusion of digitalis made without alcohol and kept without the least care, in fact, under more unfavorable conditions than could obtain in practice, may retain its activity with little impairment for periods varying from six to nineteen days, and that when the hot infusion is bottled with reasonable care, it will often keep practically unchanged for many weeks even during the summer

We do not maintain that the infusion of digitalis is a perfectly stable preparation On the contrary, it is not Practically all vegetable infusions undergo deterioration when kept standing, but the idea has prevailed that the infusion of digitalis is especially unstable There does not appear to be any basis for this belief

The specimen made by the official process and kept in the ice-box for a period of four weeks retained its activity practically unchanged That made without alcohol and kept cold lost nothing in two weeks, but these results are overshadowed by those obtained in the second series of experiments

The specimen that was opened frequently, and kept under conditions much like those which obtain in practice, lost nothing in three weeks, and that is longer than an infusion should be kept on hand by a patient It is surprising that a specimen mixed with sweepings from the floor should have retained its activity unimpaired while standing at room temperature for nearly three weeks The slow deterioration of the specimen that had been planted with a pure culture of the colon bacillus is also noteworthy Rapid deterioration was to be expected after the addition of fecal matter, and it is only surprising that the rate of deterioration was not greater

The results of our experiments may seem new and striking to the reader who is accustomed to hear much about the extreme instability of preparations of digitalis, and of the infusion especially, but thirty-seven years ago Prall[2] stated that the filtered infusion of digitalis will keep as long as it is ordinarily required by the patient Two years later Binz[3] stated that the infusion decomposes owing to a mold, and that sometimes it keeps well and sometimes it does not Certainly a moldy preparation should not be used therapeutically

The question naturally arises why the infusion and other preparations of digitalis should be reputed to decompose so rapidly if they are actually as stable as we maintain[1]

The chemistry of digitalis presents many difficulties to the investigator, and we do not know in what form the active constituents exist in the leaf, or what changes and transformations of one active constituent into another take place during extraction and on standing.

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[2] Prall Am. Jour Pharm, 1878, p 424, quoted from Proc. Am Pharm Assn, 1879 p 72

[3] Binz, quoted from Proc. Am. Ph Assn, 1880, p 45

The therapeutic use of this drug is also rendered difficult, partly by reason of the fact that it is necessary to use a dose that borders closely on the toxic in order to secure the full therapeutic effects, and partly because comparatively few physicians can become sufficiently expert in the treatment of cardiac disease to determine in difficult cases whether a given condition results from the progress of the disease, from insufficient dosage or from overdosage.

This difficulty is due to the fact that cardiac insufficiency and various types of irregularity are common in many forms of cardiac disease and digitalis overdosage even in the absence of cardiac disease, and further, that the toxic actions of digitalis may be elicited without the appearance of any therapeutic effects.

The well-known disadvantages of digitalis have served as a constant stimulus to the exploitation of proprietary preparations of it, and many manufacturers have persistently exaggerated the disadvantages of the drug and its official preparations in order to magnify the advantages claimed for their specialties.

We would not be understood as advocating the general employment of the infusion of digitalis. It is necessarily of variable activity as obtained from different pharmacists, and it is probably also of varying degrees of stability as thus obtained. The actions of the infusion differ in no way qualitatively from those of the tincture or the leaf, and these can be obtained of more nearly uniform activity, and certainly of greater stability than the infusion. The dose of either is smaller, and we know of no indications whatever for the employment of the infusion in preference to these two.

CONCLUSIONS

1. The infusion of digitalis is fairly stable when prepared and kept with ordinary care, no important change then occurring within a week.
2. The addition of alcohol to the infusion is unnecessary.
3. Old, and even moldy, digitalis and its infusion may give the typical digitalis actions qualitatively so long as they retain any considerable degree of activity.
4. A properly made infusion of digitalis represents the leaf practically in its entirety, the action being qualitatively like that of the tincture.
5. Owing to the variability in activity of the infusion as it is commonly obtained, the tincture should be preferred to it in therapeutic practice.

414 East Twenty-Sixth Street.

The Migration of Flies.—Recently Mr. George B. Harrison, president of American Balloon Pilots, said that flies had been encountered in strong air currents at high altitudes. He declared that on a recent trip, from southern Texas traveling north, they encountered an air current at about 5,000 feet altitude, going at the rate of about 60 miles an hour, and that a considerable number of house flies came into the basket of the balloon being swept along in this tornado-like current. This observation leads to the inevitable conclusion that flies may migrate very great distances and that in this manner infected flies may be the means of transmitting certain infectious diseases over a wide range of country.—*Kansas State Board of Health Bulletin No. 9*, September, 1915.

THE USE OF MERCURY SALICYLATE IN SYPHILIS

A RECORD OF ITS INFLUENCE ON THE WASSERMANN REACTION IN FIFTY CASES *

KENT NELSON, M.D.
AND
E. A. ANDERSON, M.D.
Surgeon and Assistant Surgeon Respectively, U. S. Disciplinary Barracks Hospital
FORT LEAVENWORTH, KAN.

The hypodermic use of mercury salicylate in the treatment of syphilis[1] is very general at present. In line with the study of the treatment of this disease we turned to this drug and in December, 1914, began to record our results of its use in syphilis as expressed by its influence on the Wassermann reaction.

Each patient here recorded has had at least two double plus serum reactions on different dates before being placed on this list. As in our previous reports on neosalvarsan and salvarsan, all the serum tests have been made by Captain Charles F. Craig, M. C., U. S. A., thus securing uniformity of technic and interpretation of results obtained. We feel that this adds materially to the value of the work. All cases on this list are fresh cases, that is, cases without previous treatment of any nature. This latter requirement brings forty-three of the fifty cases under the "latent" heading. The remaining seven cases reported are all cases in the secondary stage of the disease. It may be well here to recall the fact that this institution is a military prison where all the inmates are under restraint and lead well-regulated lives, with an abundance of fresh air, good food, regular hours and exercise.

Influences unfavorable to treatment are completely absent and the serum reactions have been influenced solely by the treatment given. Again, in these cases no other drug has been given at any time, it being our desire to have a clear-cut record of the effect of the mercury salicylate when used absolutely by itself. Our dose of the mercury salicylate has been the same in all cases, 100 mg. or 1½ grains.

In the beginning of the treatment we repeated the dose every seventh day. We at once found this interval too short, and so next attempted to give the dose every fourteen days. Here again we found it necessary at times to allow a longer interval between doses, and so came to rely on frequent examinations, with the administration of the dose as often as possible. None of the patients has been salivated, but it has required much care to avoid this. We have kept each patient full to saturation of the drug at all times. Bowels have been kept open by the use of salines when needed. Without exception all of the patients have daily performed their full quota of work. Sore buttocks have been complained of at times following the injections, but in no case has an inflammation resulted and they have always yielded promptly to massage. No one has been excused from work on this account. The treatment has not been seriously objected to by the men, but the injections are not without certain unpleasant symptoms, and this form of treatment is not popular in this institution

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* From the Prison Hospital, United States Disciplinary Barracks, Fort Leavenworth, Kan.

[1] Nelson, K., and Haines, E. F.: Observations of the Results of Nine Months' Experience with Neosalvarsan at the U. S. Military Prison Hospital, Fort Leavenworth, Kan., The Journal A. M. A., March 28, 1914, p. 989. Observations of the Results of Seven Months' Experience with Salvarsan in the Treatment of Syphilis, The Journal A. M. A., Dec. 26, 1914, p. 2277.

Objective symptoms yield to this treatment, but such symptoms yield far more rapidly to the salvarsan treatment, and any belief that the effect of the salvarsan treatment is prolonged — aided or reenforced by the mercury salicylate — is certainly no longer tenable In the light of our experience it seems improbable that the salicylate alone and unaided possesses any real curative value in this disease

In this institution mercury salicylate is at present the only treatment used and we can quote double the number of cases here reported if we use cases of patients who have had treatment before coming to us The salicylate does not influence the serum reaction in these cases any more than it does in the cases here reported In the table it will be noted that the serum reactions of some cases have varied from the double plus to the plus minus or minus, and later returned to the double plus while the treatment was in progress It is our opinion that these variations in the serum reactions are due to other causes than the treatment[2] For if they were brought about by the treatment, then why should the double plus reaction again appear when the treatment was being vigorously carried on?

MONTHLY RESULT OF WASSERMANN REACTIONS

Case Number	Date of Beginning Treatment	Stage of Disease	No Doses Hg Sal 100 Mg Each	No of Wassermann Reactions	Monthly Result of Wassermann Reactions							
1	12/ 7/14	Lat	18	8	++	++	++	++	++	++	++	++
2	12/ 7/14	Lat	10	6	++	++	++	—	++	+		
3	12/ 7/14	Lat	20	8	++	++	++	+	+	—	++	++
4	12/ 7/14	Lat	14	7	++	++	++	++	++	±	++	
5	12/ 7/14	Lat	16	8	++	++	++	++	++	++	++	++
6	12/ 7/14	Lat	10	8	++	++	±	—	+	—	±	++
7	12/ 7/14	Lat	18	8	++	++	++	+	++	++	++	++
8	12/ 7/14	Lat	20	8	++	++	++	++	++	++	++	++
9	12/ 7/14	Lat	20	8	++	++	++	++	++	±	—	++
10	12/ 7/14	Sec	16	6	++	+	±	+	—	++		
11	12/ 7/14	Lat	13	6	++	++	++	++	++	++		
12	12/ 7/14	Lat	13	6	++	++	++	++	++	++		
13	12/ 7/14	Sec	11	6	++	++	++	±	++	±		
14	12/ 7/14	Sec	18	8	++	++	++	++	++	+	++	++
15	12/ 7/14	Sec	23	8	++	++	+	+	++	++	—	++
16	12/ 8/14	Lat	19	8	++	++	++	++	++	++	++	++
17	12/ 8/14	Lat	16	7	++	++	++	++	++	—	—	
18	12/ 8/14	Lat	16	7	++	++	++	++	++	+	+	
19	12/ 8/14	Lat	14	6	++	++	+	+	++	+		
20	12/ 8/14	Lat	18	8	++	++	++	—	—	—	±	++
21	12/ 8/14	Lat	15	8	++	++	+	++	++	++	++	++
22	12/ 8/14	Lat	13	6	++	++	++	+	+	+		
23	12/ 8/14	Lat	17	8	++	++	++	++	++	++	++	++
24	12/ 8/14	Lat	12	6	++	++	++	—	—	—		
25	12/ 8/14	Lat	18	8	++	++	++	++	+	—	±	++
26	12/ 8/14	Lat	17	8	++	++	++	++	++	+	++	++
27	12/ 8/14	Lat	20	8	++	++	++	+	+	+	±	++
28	12/ 8/14	Lat	18	8	++	++	++	±	++	+	++	++
29	12/ 8/14	Sec	19	8	++	++	++	++	++	++	++	++
30	12/ 8/14	Lat	19	8	++	++	++	++	++	++	++	++
31	12/ 8/14	Lat	11	6	++	++	++	+	+	±		
32	12/ 8/14	Lat	13	6	++	++	++	++	++	+		
33	12/ 9/14	Lat	19	8	++	++	++	++	++	++	++	++
34	12/ 9/14	Lat	20	8	++	++	++	++	++	++	++	++
35	1/11/15	Lat	13	6	++	++	++	++	++	++		
36	1/11/15	Sec	8	4	++	++	++	+				
37	1/12/15	Lat	15	6	++	++	++	+	—	++		
38	1/12/15	Lat	9	4	++	++	++	++				
39	1/26/15	Lat	15	6	++	++	++	—	++	++		
40	3/21/15	Lat	10	6	++	++	++	±	++	++		
41	3/21/15	Lat	7	5	++	++	++	++	++			
42	3/21/15	Lat	11	5	++	++	++	++	++			
43	3/21/15	Lat	11	6	++	++	+	++	++	++		
44	3/21/15	Sec	10	5	++	++	++	++	++			
45	3/21/15	Lat	12	5	++	++	++	±	++			
46	3/21/15	Lat	10	5	++	++	++	++	++			
47	3/21/15	Lat	12	5	++	++	++	++	++			
48	3/21/15	Lat	11	6	++	++	++	++	++			
49	3/21/15	Lat	11	5	++	++	+	++	++			
50	3/21/15	Lat	7	4	++	++	++	++				

We hesitate to say that we consider the unaided mercury salicylate treatment of syphilis to be without value, but feel that its value is so slight as to make it unworthy of the time spent in its administration

If we accept the Wassermann reaction as an indication of the presence of syphilis and of value as a guide in the control of the disease by treatment, then it is certainly fair to believe that mercury salicylate used hypodermically in full doses over many weeks of time has little if any real influence on the disease In the table will be seen Cases 17 and 24, giving two and three negative serum reactions In both cases the men obtained clemency and were discharged from the prison at this period of treatment and we were unable to follow them further It is our belief that a continued record in these two cases would undoubtedly have shown a positive reaction later in the treatment Had they failed to do so they would have been the first to so record this treatment, for just this thing did occur in Cases 2, 3, 6, 9, 10, 15, 20, 25, 37 and 39 This also clearly establishes the value of more than one serum reaction and the error that would arise from the acceptance of a single negative reaction as final

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CAUSE AND PREVENTION OF CONSTITUTIONAL SYMPTOMS FOLLOWING DEEP ROENTGEN THERAPY

SIDNEY LANGE, M D
CINCINNATI

Since the introduction of the measured massive deep dose in Roentgen therapy, certain more or less unpleasant symptoms following the exposures have been observed The symptoms are chiefly of a systemic nature With the production and use of rays of greater penetration, these symptoms have been accentuated These constitutional after-effects of the massive deep treatments are not merely annoying, but often become distressing and even dangerous This is especially true when the patients are aged and debilitated or when the patient is cachectic, asthenic or toxic as a result of the presence of malignant, ulcerating or suppurating lesions about the body The after-effect of the roentgenization is often especially marked in neurotic patients or in patients who have just been subjected to operative procedures It is an old observation that patients suffering with alterations in the cellular content of the blood or with diseases of the blood-making organs are prone to develop unpleasant symptoms of a distinctly toxic nature after Roentgen-ray treatment

The symptoms following deep Roentgen-ray therapy vary greatly with the general condition of the patient, with the nature and extent of his disease and with the amount of the Roentgen-ray dosage The mildest type is an indefinite malaise felt for a day or two after the treatment It may be so marked, however, as completely to prostrate the patient, necessitating rest in bed from one or two days to a week following each massive treatment This malaise is often accompanied by marked nervousness and mental depression

Nausea and lack of appetite are almost constant accompaniments of the malaise, and may result in vomiting The patient may vomit but once (usually from two to six hours after the treatment) or the vomiting may persist for days One robust female patient who had just been operated on for cancer of the breast was unable to retain any food, except water, for eight days after a single treatment The treatment was quite severe, however, and consisted of eight full doses (200 X), 100 X were administered to the operated side, and 100 X to the unoperated and apparently normal side (It may not be out of place to mention in this connection that postoperative Roentgen-ray treatment of the breast should never be confined to the operated side but should include the unoperated or apparently normal side The reasons are obvious)

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[2] Craig, Charles F Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections, The Journal A M A, April 18, 1914, p 1232

With the nausea the patients usually associate the odors of the ozone or other gases formed about the high vacuum tube excited by a high voltage current Many of them report that the odor lingers with them, producing nausea, or that the sight or even the thought of the treatment, or of the apparatus, or of the operator recalls the mental impression of the odor and results in nausea I have frequently encouraged patients to describe the unpleasant odor, but, as a rule, no adequate description could be obtained One patient said that the odor suggested something "burnt," another described it as resembling the odor experienced when emerging from an ether anesthesia

The nausea and consequent loss of appetite frequently result in a loss in weight and strength, and may in this way be a factor in prognosis One patient under treatment for an inoperable carcinoma of the colon lost from 2 to 3 pounds in the two or three days immediately following each treatment In the intervals before the next treatment he gained from 3 to 5 pounds only to lose part of it again following each succeeding treatment Another patient insisted on being treated on Mondays, as according to his statement he wanted to enjoy his Sundays

While the malaise and nausea are the two most prominent symptoms following the massive deep treatments, a variety of other symptoms may appear There may be rapid swelling of the lymphatic glands in the irradiated areas occurring from two to six hours after the treatment This swelling of the lymphatic glands following the Roentgen-ray treatment was so marked in one goiter case that the condition was diagnosed mumps and the patient was isolated by the attending physician

Patients frequently complain of a metallic taste in the mouth for some days after the Roentgen-ray treatment, and are unable to enjoy the flavor of their food There may be also edema and congestion of the mucous membranes in the areas under treatment, resulting in dryness of the mouth and throat, pain in swallowing, soreness of the intestines, etc

It should be understood that the foregoing syndrome occurs only when massive doses are employed, and may never appear if the dosage be mild or moderate But such mild or moderate dosage is often futile in that it fails to accomplish the desired result If the larger doses are employed, however, these unpleasant symptoms may decrease the weight and strength of the patient or may be so alarming to the patient that he will discontinue the treatment against advice The practical importance of overcoming these constitutional after-effects is, therefore, evident

In the search for the cause of these symptoms, the fact that the patient complained of the disagreeable odor in the treatment room directed attention to the gases formed about the tube Therefore, I tried to overcome the possible effect of these gases by placing a jar of smelling salts near the patient or placing a small bottle in the patient's hand for inhalation during the treatment This was without appreciable effect on the undesirable symptoms I then observed that with the onset of warmer weather and the opening of the windows, the patients seemed to complain less of the nauseous odor An electric fan was, therefore, placed in an open window and the air current was directed to the patient's face This decreased the nausea, but did not entirely prevent it

I found that it was always possible to limit or prevent these after-effects by decreasing the dosage, but more especially by decreasing the voltage at the tube terminals When 9 milliamperes were passed through the tube and from 25 to 30 X delivered per area, the symptoms were very pronounced When only 5 ma were passed through the tube and from 15 to 20 X given per area, the symptoms were milder and often absent altogether

It was further observed that the constitutional symptoms appeared not during or immediately after the treatment, but required from two to twelve hours to develop Furthermore, the patients suffered most after being under treatment for some time, that is, after the thorough saturation of the tissues by the Roentgen ray and the development of the cumulative effect It was also apparent that, although the odor in the treatment room produced a recurrence of the nausea, this was only a mental reflex and not the ultimate cause of the nausea The first treatment produces no *immediate* nausea At subsequent treatments, however, the odor recalls the nausea, since the patient associates the treatment and its accompanying odor with the nausea

The effect of the Roentgen ray on living cells is to break them down or at least to increase the catabolic changes in the cells The products of the metabolic activity in living cells or of the disintegration of protein material are largely acid in reaction It seemed probable, therefore, that the unpleasant constitutional symptoms following deep Roentgen-ray therapy were the result of an acidosis either local or general It is known that the reaction produced in the skin by the Roentgen ray is a local acidosis from cellular disintegration, and that it can best be avoided or abated by the local application of the alkalies (as, for instance, Dodd's lotion)[1]

A few clinical tests seemed to prove the correctness of this theory The administration of sodium bicarbonate by mouth served to ameliorate or prevent the constitutional symptoms in a great many patients The first patient on whom this medication was carried out was very anemic and weak from uterine hemorrhage due to the presence of a fibroid Her general condition was such that the possible constitutional after-effects of the treatment were greatly feared She was given sodium bicarbonate in 30-grain doses every three hours for twenty-four hours previous to the treatment, and this medication was continued for forty-eight hours after the treatment None of the unpleasant symptoms developed in this case

I am now prescribing as a routine 30 grains of sodium bicarbonate every three hours, to be continued forty-eight hours after each treatment When the condition of the patient warrants it is also given over twenty-four hours just previous to each treatment to increase the alkalinity of the blood and tissues The patient is also encouraged to drink freely of alkaline waters, especially Vichy I prescribe also in each case an alkaline lotion (Dodd's formula) to be applied twice daily to the skin areas under treatment as a prophylactic measure against the development of a reaction, and I feel that, as a result of the persistent use of this lotion from the beginning of the treatment to the end, I have been able to increase the skin tolerance and to deliver in this way a greater dose to the underlying tissues than would otherwise be possible

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[1] Dodd's lotion consists of zinc oxid one half ounce glycerin 1 dram phenol (carbolic acid) one half dram lime water 8 ounces

The dose of alkali which I have been giving is perhaps in excess of what is required, and may be cut down to an amount sufficient to render the urine alkaline If 5 grains of magnesium sulphate be added, the dose may be further diminished A bottle of artificial Vichy per day is sometimes sufficient

5 Garfield Place

PYORRHEA DUE TO ORGANISMS OTHER THAN THE AMEBAS

GEORGE HOWARD HOXIE, AM, MD
KANSAS CITY, MO

Since the publication of the work of Bass and Johns on pyorrhea, there has seemed to be a tendency among dentists and many medical men to administer emetin in all cases of dental infections without establishing the presence of the endameba That the endameba is not the cause of all cases diagnosed as pyorrhea by competent dentists is shown by the history of such cases as that outlined below Its publication at this time seems, therefore, justified

History—A. L, man, aged 18, high school student, first seen Aug 2, 1912, complained of attacks of sore mouth complicated by fever, earache and knee pains The family history was negative except for tuberculosis in the second generation on the mother's side (no contact) The patient had been a healthy infant until 3 months of age, when he had otitis with a purulent discharge The sore mouth began at the age of 3 years, when the attacks began suddenly and recurred every three weeks He had the usual children's diseases, but was in spite of it all a healthy-appearing child

Present Illness—A febrile attack of stomatitis, glossitis or gingivitis (or all three) occurs every fourteen days and lasts from three to five days, ending with the removal of one or more necrotic nodules about one-eighth inch in diameter His ears "break" and "run" at longer intervals (for example, four times in the last seven years) His left knee swells up and pains him about five days from every four to eight weeks

The attack begins with a general malaise and fever, followed by a soreness of the mouth, gradually localizing into a swelling of the mucous membrane of the particular part affected In the center of this area develops a raised nodule, red, hard, but not very tender This can be seized with forceps and pulled out at the end of from three to five days without much discomfort to the patient, leaving a clean granulating surface No distinct scar is left The attacks recur without reference to habits, time of year or food The knee attacks began last year

Examination—The patient is a sturdy young man, self-controlled and showing no neurotic stigmata The weight varies from 142 to 150 pounds Systolic blood pressure, from 150 to 138 Chest shows some roughened respiratory sounds Heart sounds loud and sharp Lymph glands palpable in neck, axilla and groin (The cervical glands swell at the time of the attacks) Spleen not palpable Ears negative except for scars on membrane Nasopharynx red and "sticky" Mouth shows about half of the teeth gone and some of the remainder loose The inflammation about the teeth has gradually destroyed the alveolar processes of most of the teeth, so that the roots are exposed In some cases pus exudes from the socket on pressure, but in most cases none appears because of the frequent cleanings at the hands of the dentist. Left knee shows now little or no inflammatory disturbance

Aug 12, 1912, the lower lip was swollen and red Attack began two days ago The right ear was discharging Malaise was still increasing, pulse, 108, temperature, 101 Bad taste in mouth Pain in right ear, lip, gums Tongue flattened and coated with a glairy membrane that could be washed off with an astringent spray, leaving a reddened and glossy mucosa Culture from ear showed a small diplococcus

In the interval following this attack the patient was given a course of "rheumatism phylacogen" No result, beyond the temporary chills and malaise

Following his next attack, a course of stock staphylo-streptococcic vaccine was given (a course of autogenous vaccine had been given eighteen months previously) The following attack (October 2) was almost free from the constitutional symptoms, and only one nodule appeared, the next attack, however, was about as usual (October 22) The vaccine treatment was continued, but without distinct effect. Attacks were at their height November 6, 13 and 27 The bacteriologic study of this last nodule showed long rods and various cocci December 2, an autogenous vaccine (Hecker) was started In spite of this an extraordinarily severe attack occurred from December 14 to 18

Jan 11, 1913, the patient was just over a week's attack, fever to 101, two ulcers on left side of tongue, one on lip, one on buccal-gingival fornix, all on left side of mouth In this attack the invasion was slow and stopped for two days Interval between attacks now sixteen days

January 17, there was "rheumatism" of left knee and fingers of left hand This cleared up in three days, but the knee was more or less sore in the evening for a month

The last attack of otitis occurred January 25, and lasted only two days

March 15, a culture made from the depths of a freshly pulled necrotic plug showed on potato in twenty hours a mold—a closely felted, adherent white growth with black spot in center, small branching colorless mycelia with conical spores On blood serum, a looser growth, mycelia white, sporangia yellowish On agar the growth was white with ovoid spores, but when transplanted to potato became black (*Aspergillus niger*) In glucose bouillon, filaments (leptothrix?) with vibriolike forms

April 4, a culture from material from the depths of the ulcer immediately after the nodule had been pulled out in glucose bouillon showed chains of minute sporelike bodies and a few cocci

April 17, the pseudomembrane on the tongue showed mycelia under the microscope

May 31, the "rheumatism" that had been prevailing since May 23 stopped when the plug developed in mouth yesterday

After attempting to eradicate the sores by curettage and caustics, it was found that the nodules appeared about the tooth sockets or on the parts of the tongue coming in contact with the bad teeth

Oct 29, 1913, culture from the bottom of a plug showed a rich growth of *Aspergillus fumigatus* But a smear from the same plug showed masses of a minute diplococcus, and through them threads smaller than an ordinary mycelium, which stained blue with Wright's stain

Jan 2, 1914, a tooth was extracted From the root a culture showed a diplococcus, a staphylococcus and a streptothrix, all decolorized by Gram

February 24, ulcer in anal fold Inguinal glands enlarged and tender A sore in left buccal mucosa opposite last lower molar, and one on tongue. (Patient has had two or three of these anal ulcers before. They occur coincidently with the oral lesions)

March 19, culture on blood serum from the depths of an oral ulcer grew at room temperature a rod that united in long myceliumlike branches, not decolorized by Gram

March 21 1914, a vaccine made from these cultures was started This caused some systemic reaction, but seemed to bring on the knee inflammation

May 22 1914 neosalvarsan, 0 9, intramuscularly

June 1, 1914 new attack, as before

Aug 31 1914 withdrew 35 c c of clear fluid from left knee Culture showed a diplococcus not decolorized by Gram and the branching sporulated organism already found in the mouth

Dec 15 1914 all his teeth except the two last lower molars removed This brought on a severe attack with much hemorrhage from the sockets, which continued intermittently until December 20

Aug 13, 1915, the patient has been much better and has lost very little time from his university work But the attacks still recur at seventeen-day intervals He is now suffering from another ulcer in the anal fold

Summarizing the record, we have to do with a recurrent fever of about seventeen years' duration The focus has been the alveolar processes and the mucosa of the mouth, from which the body has been invaded The particular parts, aside from the mouth, which have shown evidences of infection, have been the left knee (bursitis) and the anal fold (abscesses) The length of the attacks has varied from three to ten days The organisms most constantly found have been a diplostreptococcus and a mold The disease has proved resistant to arsenic (salvarsan, arsacetin and the trioxid), the salicylates and other systemic and local germicides, as well as to vaccines, both autogenous and stock, single as well as mixed

The question of great interest is whether we have to do with an organism showing a cycle of from fourteen to seventeen days, or whether it is a case of temporary immunity Repeated examinations have failed to reveal any amebas Animal inoculation was negative

To me it would appear that the causative organism is one which is ordinarily nonpathogenic but which has acquired parasitic power in the tissues of this patient

It is perhaps needless to say that all the conventional drugs have been used at one time or another by the various physicians who have treated the patient The dentists employed have been the best in the city The case was worked up from the dermatologic standpoint by Dr R L Sutton,[1] and published under the caption, "Periadenitis Mucosa Necrotica Recurrens" The diagnosis of pyorrhea was given by all the dental attendants, including Dr Frederick Hecker, the author of a monograph on that subject

1334 Rialto Building

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[1] Sutton R L Jour Cutan Dis 1911, xxix, 65

Anthrax.—Anthrax was not a reportable disease in Pennsylvania prior to 1905 according to Dr Andrew A Cairns, chief medical inspector of the Philadelphia Bureau of Health Previous to that time the death rate from anthrax was high Since 1905 progress has been made in the treatment of the disease so that the death rate is now much less In 1905 there were seven cases with one death, in 1906 nine cases with three deaths, in 1907 fifteen cases with four deaths, in 1908 four cases with three deaths, in 1909 nine cases with one death, in 1910 eight cases with two deaths, in 1911 two cases with one death, in 1912 ten cases with three deaths, in 1913 nine cases with three deaths, in 1914 nine cases with four deaths For the first eight months of 1915 there were no deaths from anthrax in the city In thirty-five cases recorded in the hospital for contagious diseases all the patients except five recovered

THE TREATMENT OF CEREBROSPINAL SYPHILIS THE OGILVIE TECHNIC

FORD EASTMAN, A B, M D
Attending Surgeon, Hamot Hospital
ERIE, PA

The trail of pioneer students in the last decade has led us into a wilderness of speculation and argument concerning the pathology and treatment of syphilis, especially of the late forms Whether our combined attack with the old remedy and the brilliant new therapeutic weapon destroys the enemy or wins a truce, whether persistently negative findings in both serum and arachnoid fluid ever guarantee the death of the ultimate spirochete—these questions may be answered after forty years of wandering Meanwhile certain facts in the pathology are becoming clear, and quite definite ideals of treatment may be held

The underlying pathology of parasyphilis does not differ essentially from that of primary syphilis, but while a scarred foreskin is of no physiologic moment, a scarred optic nerve is a tragedy We must probably, however, recognize both spinal and cerebral syndromes resulting from processes degenerative in type from the time of the first diagnostic symptoms These perhaps follow years of nutritional disturbance, from relatively symptomless vascular disease long since quiescent, and are analogous in development to similar degenerations observed in primary anemia, plumbism and other toxemias in which syphilis can be excluded, or figuratively, to the gradual yielding of an aortic scar under hydraulic stress These cannot be much benefited by any known treatment Furthermore, remembering the sensitiveness of the cerebral cortex to even small traumatic cicatrices, it is not surprising that in paresis great or lasting improvement is obtained only in patients treated intensively in the very earliest stages

Syphilis is generalized, including the cerebrospinal localizations, at latest soon after the appearance of the chancre, more often without it, and without the secondary reaction, than is generally believed Whether trauma, intoxications, allergy, or some unknown phenomenon in the life cycle of the parasite later kindles into activity these foci in the nervous system, we do not know It is perhaps significant that central nerve syphilis in the secondary stage before the discovery of salvarsan, as well as syphilis neurorecidive, has been observed most often in people acquiring syphilis late in life, when it is reasonable to suppose the normal slight ependymal permeability to biologic antibodies and specific drugs is diminished by early senile change Whether the process is disseminated by metastasis or by extension alone from the primary localizations, we cannot be sure, we are sure that every syphilitic is a possible candidate for tabes or paresis until his last spirochete is killed

Therefore, and because most effective in the early stages, treatment of the late forms begins, paradoxically, with the microscopic diagnosis of the chancre In justified enthusiasm for the specific drugs, we are prone to forget the value of psychotherapy, never more essential than in the treatment of syphilis The drug treatment is mercury by injection or inunction, and salvarsan intravenously, as intensive and continuous as may be without disturbing the general health, until clinically, serologically, and in the cytology and biochemistry of the arachnoid lymph, there is no evidence of active disease This means, for example, ten injections of mercury and six of salvarsan in about four months, followed, in the absence of symptoms, by two months' rest, when the tests should be made If negative, and in the absence of symptoms, these should be repeated twice a year for several years In tertiary syphilis moderate doses of iodids in addition are unquestionably of symptomatic benefit

Since we failed of our hoped for *therapia magna sterilisans* with the single large dose of salvarsan, our careless and unscientific use of this drug, so potent for good or ill, is amazing Evidence abounds that we achieve just as much with smaller and less frequent injections The initial dose should not exceed 0 3 gm The interval should rarely be less than ten days

Latent syphilis with laboratory findings in the cerebrospinal fluid remaining strongly positive after one repetition of the course outlined should be treated intrathecally Of this I am firmly convinced The occasional patient with sufficient intelligent appreciation of his danger to offer his apparently healthy body as vicar of a diseased test tube is exactly the one whose activities it is most worth while to conserve

The Wassermann test, unreliable and unstandardized as it is, is probably our best guide, and cerebrospinal syphilis should be treated locally, intravenously, or both, according to findings in serum and arachnoid fluid

The Ogilvie method of arachnoid salvarsanization, in spite of its obvious advantages and excellent results, seems not to have won so wide a recognition as it deserves By this technic, patients for whom general salvarsanization is no longer indicated avoid the discomfort, the probable harm, of large intravenous doses, as well as the repeated venous puncture Dosage is accurate, the method economical of a drug expensive and at present difficult to obtain The Ogilvie injection in my hands proves less disturbing to the physiologic economy than the Swift-Ellis treatment Finally, this technic offers the more than academic advantage of answering the critics who believe the supposed benefit of subdural injections to result from the accompanying intravenous administration

I have treated a baker's dozen cases of tabes and meningitis by Ogilvie's technic with about the same results as others have reported Two of these I submit, not because they show the most brilliant result, for they do not, but because they illustrate points of especial interest, or perhaps justify radical views

Wassermann tests are by Dr T P Tredway, attending pathologist to Hamot Hospital, and Dr E C Jagle, in Dr Fordyce's laboratory

CASE 1—Tabes A saloon keeper, aged 51, until four years prior to being seen was a hard drinker, had a chancre twenty years previously, followed by mucous patches, for which he received no specific treatment Eight years previously he had lightning pains and ataxia In 1912, when he first consulted me, a condition of blurring and dim vision was improved by eight intravenous injections of salvarsan. During the last two years he has had detrusor insufficiency, emptying his bladder only once in twenty-four hours, loss of sexual power, and increasing ataxia His disease has been characterized throughout by agonizing pains in the legs and about the waist Until March, 1914, he received from me twelve intravenous injections of salvarsan and six courses of mercury by injection and inunction During March he had four Swift-Ellis treatments which he thought were of no benefit In fairness to the method I must admit that neosalvarsan was the drug used for these treatments I regret that at this time I was not familiar with the pathology of the spinal fluid After this he consulted other physicians, receiving osteopathic treatment and mercury injections through the summer and fall of 1914

In February, 1915, when he consulted me again, he was on the point of giving up all activity He could scarcely get about with the help of a cane, suffered with severe gastric crises and lancinating pains, which he controlled with 4 or 5 grains of morphin hypodermically every day He showed the classical signs February 11 the serum Wassermann was negative, the arachnoid fluid showing cells 45, globulin + + +, Wassermann + + + with 0 5 c.c

On this date he was given 0 25 mg salvarsan subdurally, while suffering a gastric crisis This dose was, under the circumstances, twice too large, and the reaction was severe and alarming Ten days later he felt better than at any time during the previous two years

March 1, feeling perfectly well, he received 0 1 mg, followed by a very mild reaction March 23, returning to the large dose, he had 0.25 mg, which he bore without much distress April 16 this injection was repeated, and the fluid phases were found to be normal

April 20 he spaded in his garden for two hours and danced a little in the evening without mishap His morphin he had by this time reduced to ¾ grain daily

In July he complained of pains again, I believe in the hope of a larger morphin allowance, and received 0.25 mg of salvarsan intraspinously The fluid showed no abnormalities

September 23 He walks wherever he pleases by day or night without a cane, empties his bladder without difficulty several times daily He has not vomited for seven months, and has had practically no pains He takes up to 1 grain of morphin daily, "because he is nervous without it" He can stand with his eyes closed which he could not do two years ago The pupil and tendon reflexes have not returned, and his sexual power is gone

This man's process advanced steadily and fairly rapidly during three years until he was almost a hopeless bedridden morphinomaniac, in spite of systemic treatment as strenuous as anyone could be asked to endure, besides four Swift-Ellis injections Tests of his fluid were characteristic of active disease For the past seven months he has enjoyed very fair health and an ordinarily active life. By his own effort he reduced his morphin by more than three quarters He has received five intrathecal injections of salvarsan by the Ogilvie technic, no other treatment of any kind, medicinal, mechanical or educative His cerebrospinal fluid is normal

CASE 2—Latent syphilis A lawyer of 35 single and of good habits consulted me in 1912 with the history of a possibly specific sore without secondaries twelve years previously, and a positive serum Wassermann During the next eighteen months he had nine intravenous injections of salvarsan and four courses of thirty mercury inunctions The Wassermann remained triple plus, the patient "in smiling health, in spite of the disease and in spite of the treatment"

In February, 1914, the pupils became unequal He received mercury injections until May, then two intravenous injections of salvarsan, no further treatment until July, when he had pains and tingles in hands and forearms and across the back, and the pupil responses to light became sluggish Mercury injections were resumed until September, when he had one Swift-Ellis treatment, 20 c.c serum with 10 c.c. saline Meningism required rest in bed for ten days At this time the serum Wassermann was doubtful, the fluid showed cells 35, globulin abundant, Wassermann complete with 0.2 c.c. A second Swift-Ellis treatment was followed by blurring vision (Herxheimer reaction, or temporary paresis from irritation?) Dr I J Dunn reported normal fields and disks

October 15, 1914, this patient was referred to Dr J A. Fordyce, who found the pupil changes and also noted exaggerated tendon reflexes in the left leg He advised a series of eight intravenous injections, the patient to report to him after this course.

January 15, by Dr Fordyce Patient profoundly hypochondriac, serum Wassermann negative, cells 4 globulin excess very marked, inhibition complete with 0 4 c c, the important phases thus slightly affected by two Swift-Ellis injections and eight intravenous No change in the signs Patient received 0.25 mg intraspinally, by Dr Fordyce, followed by a moderate reaction lasting four days In February this injection was repeated by Dr Fordyce, the phases in the fluid showing some improvement

Since then this patient has been in vigorous mental and physical health He has received at my hands three subdural injections of 0.25 mg each at eight-week intervals The serum Wassermann remains negative that in the fluid has become weaker by almost perfect arithmetical progression with each injection, to practically normal The patient has no symptoms, the signs are perhaps slightly improved

It is but fair to credit the clinical improvement under the Ogilvie injections to the psychic effect of kindly reassurance by a wise and recognized authority, for the real subjective symptoms cleared up under Swift-Ellis and intravenous injections at my hands, the signs remaining stationary For the local treatment may justly be claimed the return to normal of the spinal fluid, for I do not believe psychotherapy ever rendered a Wassermann negative From the complete arrest of the process in this case it seems reasonable to believe that if local treatment had been instituted before the appearance of clinical signs and symptoms, their onset might have been postponed, perhaps indefinitely, and the patient spared a psychical upset which made him useless for several months

My field is too small to yield any large harvest of conclusions Ogilvie's study seems to me the great advance in the therapy of syphilis since Ehrlich's discovery, his technic the method of choice in the local treatment of cerebrospinal forms of this disease

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SOME CLINICAL MANIFESTATIONS OF FOCAL INFECTIONS

SVERRE OFTEDAL, M.D
FARGO, N D

Focal infection as a definite factor in diagnosis and treatment has become well established, through the work of Rosenow, Billings, and others, it is no longer in the experimental stage The clinical manifestations come under the eye of the observing practitioner almost daily In our clinic at St Luke's Hospital it has become a matter of routine to search carefully for foci of infection and to demonstrate their presence wherever possible Some interesting observations have come to light which it seems might be worthy of publication The following cases are cited, because each seems to illustrate a certain phase or phases of the subject

Case 1—A T., a boy of 12, came to my office in July, 1912 He had been suffering for several years with chorea, which, in spite of the usual treatment, rest in bed, Fowler s solution, etc, had been growing more and more severe The eyes were continually rolling from side to side, the head was always changing position, and other muscles of the body were jerking constantly General nutrition was poor, there was a slight mitral lesion and a rather indefinite history of sore throat ' Tonsils were of the embedded variety and apparently not enlarged Examination was otherwise negative The tonsils were extirpated and the left was found to contain pus from which a streptococcus was isolated The boy was put to bed, Fowler s solution being prescribed in increasing doses In five weeks twitchings had all ceased, and patient seemed to have made a perfect recovery

The supplementary treatment was given because it was deemed unjustifiable to withhold any measure that might contribute to the patient's recovery Since this treatment had been given previously without effect, however, there seems to be little room for doubt that the real cause for recovery lay in the extirpation of the tonsils, the focus of infection

Case 2—R G, girl aged 13, entered the hospital in August, 1915 She had been subject to attacks of tonsillitis for several years About a year ago one of these attacks was associated with rheumatic pains and swelling of the joints, which, however subsided, being followed by several other severer attacks at intervals until about seven weeks ago, when she entered the hospital At that time the child was greatly emaciated, and had the typical appearance and symptoms of a severe endocarditis The tonsils appeared to be innocent being of apparently normal size and color For several weeks the temperature ranged between 102 and 104 F, salicylates and other medication being given without any apparent effect A bacteriologic examination was then made of the tonsils From the crypts of the left tonsil was obtained a slight amount of pus, which yielded a pure culture of a green-producing streptococcus under anaerobic cultivation It was decided that the tonsils must be removed, in spite of the poor condition of the patient Under local anesthesia this was successfully accomplished Both tonsils were of the size of a large hazelnut, the right was apparently normal in structure, but the left contained considerable quantities of pus The left tonsil was emulsified under aseptic precautions and the emulsion suspended in salt solution, injected into three rabbits, varying quantities being injected intravenously The first animal died of anaphylactic shock shortly after injection, the second died about eight hours after injection with every symptom of an overwhelming septicemia, streptococci being isolated from the blood in great numbers The third rabbit had been given a very small dose and showed no noticeable symptoms until about two weeks later, when an inflammation of one of the joints developed The following few days the animal grew gradually worse, and was chloroformed There was considerable fluid in the pleural peritoneal and pericardial cavities, the latter containing a flaky deposit The heart was dilated and flabby and the mitral valve showed retraction and a small hemorrhage From the blood and serous fluids was isolated the *Streptococcus viridans*

Meanwhile, the day following extirpation of the tonsils, the patient complained of a severe pain over the right kidney The urine, which had hitherto been normal showed the findings of an acute hemorrhagic nephritis On cultivation, under great precautions a pure culture (anaerobic) of a green-producing streptococcus was obtained, corresponding in every way to that obtained from the left tonsil A vaccine was prepared and given at intervals of six days After two injections the urine had again become normal, while the temperature gradually diminished

This case is given in detail because it seems to demonstrate conclusively the source of the infection These two cases also are illustrations of the so-called "embedded" tonsils whose innocent appearance will often deceive even the specialist

Case 3—Mrs M aged 31 entered the hospital in June 1915 About four weeks before the patient was attacked with pain and swelling of certain joints particularly of the fingers, wrists ankles and toes About a week later she observed a breaking out of the skin She consulted a physician who prescribed the usual treatment for rheumatism but without much improvement Patient finally entered the hospital and was found to be suffering with acute articular rheumatism, associated with a rather severe erythema multiforme A careful examination was made for a primary focus of infection The only positive findings were two adjoining teeth (anterior molars) which had been carefully filled, but which were a little loose and slightly tender, yet had given no serious trouble to the patient It was advised that these be extracted, but consent of the patient could not be obtained for a week, during which time large doses of salicylates were given, with no apparent effect whatever The patient finally decided to part with the teeth, which were promptly xtracted That night the patient enjoyed a comfortable eep for the first time since the illness began In three veeks she left the hospital perfectly cured

Cultures made from the alveolar abscess found at the root of one of the teeth yielded a pure culture of a streptococcus, having a slightly hemolyzing colony and growing in short chains

Case 4—Miss J J, aged 18, came to the hospital in July, 1915, complaining of a severe headache, and pain in the left knee and over the heart Patient had had attacks of pain over the heart previously, also headaches for some time, but had not before been troubled with "rheumatism" The knee was found to be slightly swollen and tender, there was a murmur over the apex, the pupils were considerably distended Temperature 101 Examinations of teeth, tonsils and nose were negative She was referred to a specialist for a careful examination of the sinuses, and these were found to be apparently normal A daily inspection of the throat was made, with no results until one day when the patient said she felt somewhat better A considerable quantity of a greenish, thick pus was found to be discharging down the posterior pharyngeal wall Cultures were made and a streptococcus isolated, from which a vaccine was prepared Patient began to improve after the first injection of the vaccine, and after five doses had been given she had apparently made a complete recovery

This case emphasizes the fact that a focus of infection may often be overlooked, even by a competent specialist, when seated in the upper sinuses A daily inspection for discharging pus seems to be the only recourse in such cases

HEMATEMESIS FOLLOWING APPARENT ACUTE INDIGESTION

REPORT OF A CASE OCCURRING IN AN INFANT

George V Duffy, M D, Woodhaven, L I

J F, a male child, aged 2 months, weighed at birth 6½ pounds Though of small size he was apparently healthy He was bottle fed from the beginning as the mother (quintipara), having secondary anemia from severe postpartum hemorrhage after each delivery, was never able to nurse

The present illness began during the hot days of August, with vomiting, diarrhea, and fever The abdomen was distended, the child was very restless and cried continually After the second day the temperature became normal, vomiting ceased, the bowels were constipated, abdominal distention and pain alone remained On the fourth day the child passed into a state of semiconsciousness (respirations were interrupted and of the Cheyne-Stokes type) On the fifth day he passed a large watery stool, the distention was much less, the respirations became quiet and regular, the condition of stupor disappeared, the eyes appeared bright, and a better color returned to his skin About 3 p m on the fifth day the child became suddenly weak and pale but in a few minutes appeared much better About 4 30 p m he vomited about a teaspoonful of dark brownish fluid The child, however, continued apparently to gain strength until 6 30 p m when it suddenly vomited a very large amount of blood, dying while vomiting

5 Forest Parkway

Therapeutics

THE MORPHIN HABIT

(Concluded from page 1817)

OBJECTS OF TREATMENT

1 To stop the drug
2 To prevent pain and cause sleep
3 To increase all secretions
4 To sustain the strength
5 To support the heart
6 To teach self-control
7 To promote nutrition and general health

These are the main objects that one must keep in mind, and they also represent some of the difficulties in the cure of the morphin habit

DETAILS OF METHODS OF TREATMENT

Towns-Lambert Method—The details, as described by Dr Lambert, are as follows

The morphin patient is given five compound cathartic pills and 5 grains of blue mass If these have not acted in six hours, he is given a saline cathartic After three or four free movements, he is then given in three divided doses at half-hour intervals, two-thirds or three-fourths of his total twenty-four hour morphin or opium dose The drug is given in the way he usually takes it After the second dose, Lambert cautions the physician to study the patient carefully, as a few patients cannot comfortably take more than this amount, and should not receive the third dose of morphin Beginning at the same time that the first dose of morphin is given, 6 drops, from a medicine dropper, of the belladonna, xanthoxylum and hyoscyamus mixture above described are given, and this dose is repeated every hour for six hours At the end of six hours the dose is increased by 2 drops This belladonna mixture is then continued every hour, day and night, continuously throughout the treatment, increasing 2 drops every six hours until the dose has reached 16 drops, this 16-drop dosage is then continued The belladonna drops are diminished, or discontinued, at any time that the patient shows symptoms of belladonna poisoning, which is evidenced by dilated pupils, flushed face, dry throat, or "a peculiar incisive and insistent voice and an insistence on one or two ideas" It would seem as though the dilated pupils and dry throat would be present early in almost every case If the belladonna treatment has been stopped, it is again begun at a reduced dosage as soon as the symptoms have subsided If there is idiosyncrasy against belladonna, it will be shown in the first six or eight hours, and the dose must then be diminished If 16 drops, the full dose, given for twelve consecutive hours do not cause dryness of the throat, the dose should be increased to 18, and to 20 drops per hour, and when the throat is dry, the dose should be reduced

Ten hours after the first dose of morphin, the patient is again given five compound cathartic pills and 5 grains of blue mass If they do not act in eight hours, a saline cathartic should be given When the bowels have acted thoroughly, one half of the dose of morphin given at first should be given As just stated, the belladonna drops are still being continued, and ten hours after the second dose of morphin has been given, that is, about the twenty-eighth hour of treatment, five more compound cathartic pills are given and 5 grains of blue mass, followed again by a saline if the bowels do not act in eight hours. After the bowels have thoroughly acted from the last dose of cathartics, the third dose of morphin is given, which should be one sixth of the first dose. It is stated that usually this will be the last dose of morphin required.

Ten hours after the third dose of morphin, that is, at about the forty-sixth hour, five compound cathartic pills and 5 grains of blue mass are again given, followed by saline, if needed, and at this time, if not before, a bilious green stool should appear. When this appears, usually about eighteen hours after the third dose of morphin or about the fifty-sixth hour of treatment, 2 ounces of castor oil are given to clean out the intestine. Sometimes, Lambert states, it is necessary to continue the belladonna mixture over one or two more cathartic periods before giving the oil.

During the last bowel-moving period the patients are the most uncomfortable, and their excessive nervousness and discomfort may be controlled by codein, "which can be given hypodermically in 5-grain doses and repeated, if necessary, or some form of valerianates may help them." It would seem very doubtful if valerianates could be mentioned in the same category with a 5-grain dose of codein. The valerianates have never been shown to have any activity whatsoever.

At about the thirtieth hour of treatment, the patient should be stimulated with strychnin or digitalis, or both, every four to six hours. The amount of strychnin is not mentioned, neither is the amount nor the preparation of digitalis. Digitalis should rarely be given at four-hour intervals. This cardiac stimulation is left entirely to the judgment of the physician who is caring for the patient.

It is stated that some patients cannot tolerate the codein, as it causes poisoning, and urticarial rash, etc. Such patients may receive ethyl-morphin hydrochlorid, and Lambert thinks that the latter is twice as strong in its activity as codein, and he thinks the dose should be "2 or 3 grains, or less." The dosage of this drug, according to New and Nonofficial Remedies, is from one-quarter to 1 grain. The codein or dionin, whichever is given, should be stopped as soon as possible after the castor oil has acted, although it may be given during the succeeding twenty-four hours if necessary, but it should not be continued more than forty-eight hours, as they will acquire this habit, or return to the morphin habit.

Joint and other pains, and bone and muscle aches, Lambert says, "can sometimes be relieved by hypodermics of some form of ergot and strychnin, sometimes by massage, sometimes by sodium salicylate, sometimes by a salicylic compound combined with some of the coal-tar products, such as antipyrin or acetphenetidin, and they can always be eased by codein or dionin. The addition of codein to these coal-tar products increases their analgesic effect." Of course, it does, and it would seem almost inexcusable, if morphin is being withdrawn, to continue codein or ethyl-morphin hydrochlorid for more than one or two doses. The choice of these drugs is apparently left to the physician in charge of the patient. It would seem that the more drugs, the worse for the patient. All coal-tar products are depressant and are dangerous for a heart, especially after it has been through the trials it must go through in the two or three days of this treatment.

Insomnia, Lambert says, may be treated sometimes with bromids, sometimes with chloral or some other hypnotic. Veronal, he says, has caused much depression. Any of these hypnotics must cause some depression. He states that as soon as the patient is up and about, muscular fatigue caused by regular exercise makes him sleep, and usually such exercise can be taken at the end of a week.

The Pettey Method.—On the first day of the treatment the patient may take his usual dose of morphin, but he must go without his dinner and supper. Pettey's cathartic prescription, which contains atropin and strychnin as above described, is divided into four doses and placed in capsules. The patient takes one of these capsules every two hours, beginning at 4 p. m. The following morning he receives no nourishment and no morphin until his bowels have thoroughly moved. To insure that they do move, about 5 a. m. the next morning he is given one-twentieth grain of strychnin hypodermically (although he already has had one-fourth grain of strychnin since 4 p. m. the day before). Half an hour later he is given 2 ounces of castor oil or the contents of a bottle of magnesium citrate. Both the strychnin and the oil or saline should be repeated every two hours until the intestinal canal has been thoroughly emptied, and no morphin should be given during this time. It would certainly seem as though a morphin patient was very tolerant to strychnin, and it may be that he is sustained by this large dose of strychnin during the first period of going without his morphin.

After the bowels have freely moved, and the craving for morphin becomes insistent, the patient should be given from one half to two thirds of his usual dose of morphin at the same intervals at which he has been accustomed to take the drug. After this free purging he may have plenty of food regularly, provided he eats nothing for six hours before he begins his second purgative treatment, which should be at the end of forty-eight hours from the first. The cathartic capsule should be given in the same way as on the first day. The morphin may be continued in reduced dose, just sufficient to keep the patient comfortable, until the last dose of the cathartic capsule has been given, when it it is stopped, and no more opiate should be given. From six to eight hours after the second purgative course has been completed, strychnin hypodermically and the oil or saline should be repeated as before. As soon as the patient feels the need of the morphin after this second free purging, instead of morphin or an opiate, he is given $\frac{1}{200}$ grain of scopolamin hypodermically, and this is repeated in thirty minutes. If the patient does not sleep after the second dose, a third may be given in half an hour or an hour, which may be of the same amount, or double the amount, depending on the effect. This large dosage of scopolamin will cause either sleep or a mild intoxication. In either case the patient will not suffer. As soon as he wakes, he is given another $\frac{1}{200}$ grain of scopolamin, and this atropin intoxication should be repeated, if necessary, to keep the patient free from pain, for from thirty-six to forty-eight hours after it was begun. It should then be stopped. During the scopolamin period and for twenty-four hours afterward, Pettey gives 20-grain doses of sodium thiosulphate every two hours, which he thinks supplements the effect of the calomel purgative.

Convalescence is established on the fifth to the sixth day, when medication should cease, except treatment aimed at improving the general condition of the patient. During the treatment a weakened circulation is treated by Pettey by giving spartein sulphate in doses of 2 grains, every four to six hours.

Sceleth Method—Patients treated by this method are first given a saline cathartic, and then the mixture of scopolamin, pilocarpin, ethyl-morphin hydrochlorid and cascara sagrada in the combination described previously The dose varies according to the amount of morphin the patient is taking When more than 10 grains of morphin per day are being taken Sceleth gives 60 minims every three hours, day and night for six days On the seventh day the dose is reduced to 30 minims, on the eighth day to 15 minims, and on the ninth day 15 minims three times a day instead of every three hours day and night On the tenth day this treatment is stopped, and strychnin nitrate, one-thirtieth grain, three times a day is substituted On the eleventh day the strychnin is reduced to one-sixtieth grain three times a day, and this is continued for a week During the first five days he gives a very light diet, but liquids freely

Patients who are taking less than 10 grains of morphin a day start with a dose of 30 minims of the mixture, and if less than 5 grains, 15 minims

This treatment represents the substitution of ethyl-morphin hydrochlorid for morphin, the fighting of the morphin depression by scopolamin, the necessary promotion of secretions by pilocarpin, and the necessary laxative treatment by cascara In other words, *this is apparently the simplest and most rational treatment of the three*

During the first three days of the treatment the patients of course are sleepless, and they may vomit, but these symptoms occur with any treatment If the pulse goes below 40 or above 120 per minute, the scopolamin mixture is stopped, and if there are any signs of collapse, one-half grain of ethyl-morphin hydrochlorid, or one-quarter grain of morphin is given hypodermically The same is true of any treatment, if collapse is in evidence, morphin must almost invariably be given

Sceleth says that in only about 4 per cent of the cases is there scopolamin delirium, and when such a condition occurs the scopolamin may be omitted from the mixture for a few doses and then added in small doses He further says what is very laudable, namely, to use no other drugs during the treatment By the fifth day the patient generally has no further desire for his morphin and is ready for food, and may have a ravenous appetite and gain weight rapidly

Sceleth very wisely says that if the cause that developed the morphin habit is still present, these patients are likely to relapse, if the cause that developed the habit has been removed, the patients are generally permanently cured Consequently, if the cause that developed the habit has not been removed, it is a subject for the most careful therapeutic and, if necessary, surgical consideration There certainly is little use in putting a patient through the serious ordeal for the cure of the morphin habit if recurrent severe pain is sure to occur

The physician is urged to study the action of the drugs employed in the treatment of the morphin habit, and it is recommended that he first try the Sceleth method, which would seem to be the least dangerous, to cause the least hardship, and probably has as good a percentage of cures as any other treatment

THE COCAIN HABIT

Often a patient who has the cocain habit also takes morphin, therefore frequently the two habits must be treated at once In any case the cocain is stopped abruptly, the same elimination by free catharsis is necessary, and supporting treatment, especially with strychnin, is important The combination of the cocain and morphin habits is perhaps the hardest one to cure, and Lambert says that as soon as the morphin is reduced the patients become delirious, and often almost unmanageable

Any one of the methods described for the cure of the morphin habit may be used to cure the double habit, as just stated, the cocain being stopped immediately

SYMPTOMS OF COCAIN POISONING

The local anesthetic symptoms need not be described The symptoms after absorption, in a patient who is not used to the drug, vary greatly, many are excited mentally and are very loquacious, some may become slightly exalted or even delirious The heart and respiration become more rapid, the pupils may dilate, and there may be some headache The reflexes are likely to be exaggerated There may be some slight trembling Other patients are prostrated and become very faint, and even may become collapsed, if too much cocain has been absorbed Vomiting may occur, but is perhaps rarely present unless the cocain is applied accidentally or intentionally to the pharynx, when the sensation of a foreign body in the pharynx, due to the anesthetized area, may cause reflex vomiting The primary stimulation of cocain is not dissimilar to that of atropin

Individuals who take the drug frequently, and become accustomed to it, receive mental stimulation from the cocain not dissimilar to that caused by caffein They also, before they have been injured by the drug, may have more muscle endurance, and are fatigued less easily and can abstain longer from food without depression Part of this action is doubtless due to the increased activity of the heart with some rise in blood pressure, and to the stimulation of the medulla oblongata and the spinal cord, all causing increased nervous tension Sooner or later, depending on the particular individual, reaction sets in, the blood pressure falls, and the person becomes irritable, languid and weak

In animals at least, and probably to a large extent in man, the cocain is almost entirely destroyed in the system, only a small amount being excreted by the kidneys

Cocain is a poison It more or less interferes with the secretions, digestion and finally nutrition The cocain habitué becomes sleepless, nervous and tremulous, and may have hallucinations or become really insane As stated, the main danger from the withdrawal of the drug is cerebral excitation and cardiac weakness

(To be continued)

School Inspection—In seventeen of the twenty-five states there is no organized health inspection of rural schools under competent authorities In Idaho, Utah, Colorado, Pennsylvania, New Jersey and Virginia there is such an organized system, and the statistics for the rural schools are kept distinct from those of the city schools In Maine and Rhode Island city and county records are listed together, a distinct disadvantage in determining the condition of the nation's schools In no states other than these mentioned is there health inspection for the rural districts In a commonwealth so advanced in educational matters as Massachusetts there is no health inspection of rural schools—Dr *Philip Sumner Spence*, *Public Health*, September, 1915

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES"

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL

W A PUCKNER, SECRETARY

ETHYL BROMIDE (See N N R, 1915 p 25) —The following non-proprietary preparation has been accepted

Ethyl Bromide Merck—Manufactured by E Merck, Darmstadt Germany (Merck and Co, New York)

HOMATROPINE HYDROCHLORIDE (See N N R, 1915, p 57) —The following non-proprietary preparation has been accepted

Homatropine Hydrochloride Merck —Manufactured by E Merck, Darmstadt, Germany (Merck and Co, New York)

SODIUM CACODYLATE (See N N R, 1915, p 49) —The following non-proprietary preparation has been accepted

Sodium Cacodylate Merck—Manufactured by E Merck Darmstadt Germany (Merck and Co New York)

IODOTHYRINE (See N N R., 1915, p 219) —The following dosage form has been accepted

Iodothyrine Tablets 3 grains—Each tablet contains iodothyrine 3 grains. Prepared by Farbenfabriken, vorm Friedr Bayer & Co, Leverkusen, Germany (The Bayer Company, Inc, New York)

THYRESOL (See N N R. 1915 p 277) —The following dosage form has been accepted

Thyresol Pearls 5 grains—Each pearl contains thyresol 5 grains. Prepared by Farbenfabriken vorm Friedr Bayer & Co Leverkusen Germany (The Bayer Company Inc. New York)

THEOCIN-SODIUM ACETATE (See N N R., 1915, p 375) —The following dosage form has been accepted

Theocin Sodium Acetate Tablets 1½ grains — Each tablet contains theocin sodium acetate 0.1 Gm (1½ grains) Prepared by Farbenfabriken vorm. Friedr Bayer & Co Leverkusen Germany (The Bayer Company, Inc. New York)

EMETINE HYDROCHLORIDE (See N N R, 1915, p 107) —The following dosage forms have been accepted

Ampuls Emetine Hydrochloride Mulford 1/12 grain—Each ampule contains emetine hydrochloride 0 005 Gm (1/12 grain) Prepared by H K Mulford Co Philadelphia.

Ampuls Emetine Hydrochloride Mulford ⅓ grain Each ampule contains emetine hydrochloride 0 02 Gm (⅓ grain) Prepared by H K Mulford Co Philadelphia

Ampuls Emetine Hydrochloride Mulford ⅔ grain — Each ampule contains emetine hydrochloride 0 04 Gm (⅔ grain) Prepared by H K. Mulford Co, Philadelphia

SODIUM CACODYLATE (See N N R., 1915 p 49) — The following dosage forms have been accepted

Ampuls Sodium Cacodylate Mulford 1½ grains — Each ampule contains sodium cacodylate 0 1 Gm (1½ grains) Prepared by H K. Mulford Co Philadelphia

Ampuls Sodium Cacodylate Mulford 3 grains—Each ampule contains sodium cacodylate 0 2 Gm (3 grains) Prepared by H K Mulford Co Philadelphia.

QUININE AND UREA HYDROCHLORIDE (See N N R., 1915, p 260) —The following dosage form has been accepted

Ampuls Quinine and Urea Hydrochloride 1% Mulford—Each ampule contains 5 Cc. of a sterile 1 per cent. solution of quinine and urea hydrochloride. Prepared by H K Mulford Co Philadelphia

MERCURIC SUCCINIMIDE (See N N R, 1915, p 201) —The following dosage form has been accepted

Ampuls Mercury Succinimide Mulford ⅙ grain—Each ampule contains mercury succinimide 0 01 Gm (⅙ grain) Prepared by H K. Mulford Co Philadelphia

CALCIUM PEROXIDE (See N N R, 1915, p 230) — The following non-proprietary preparation has been accepted

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MAGNESIUM PEROXIDE (See N N R, 1915, p 231) —The following non-proprietary preparation has been accepted

Magnesium Peroxide P W R—Manufactured by Powers-Weightman Rosengarten Co Philadelphia

SODIUM PEROXIDE (See N N R, 1915, p 232) —The following non-proprietary preparation has been accepted

Sodium Peroxide P W R—Manufactured by Powers-Weightman Rosengarten Co, Philadelphia

STRONTIUM PEROXIDE (See N N R, 1915, p 233) —The following non-proprietary preparation has been accepted

Strontium Peroxide P W R—Manufactured by Powers Weightman Rosengarten Co Philadelphia

ZINC PEROXIDE (See N N R, 1915 p 234) —The following non-proprietary preparation has been accepted

Zinc Peroxide P W R—Manufactured by Powers Weightman Rosengarten Co, Philadelphia

SODIUM PERBORATE (See N N R, 1915, p 277) — The following non-proprietary preparation has been accepted

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FORMIC ACID (See N N R 1915, p 141) —The following non-proprietary preparation has been accepted

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AGAR AGAR (See N N R, 1915, p 22) —The following non-proprietary preparations have been accepted

Agar Agar Powder Merck—Agar Agar in the form of a coarse powder Manufactured by E Merck, Darmstadt Germany (Merck and Co New York)

Agar Agar Shreds Merck—Agar Agar in the form of shreds Manufactured by E. Merck Darmstadt Germany (Merck and Co New York)

BERBERINE HYDROCHLORIDE (See N N R, 1915, p 58) —The following non-proprietary preparation has been accepted

Berberine Hydrochloride Merck—Manufactured by E Merck Darmstadt Germany (Merck and Co New York)

FLUORESCEIN (See N N R, 1915, p 132) —The following non-proprietary preparation has been accepted

Fluorescein Merck—Manufactured by E Merck Darmstadt Germany (Merck and Co New York)

MERCURY CYANIDE (See N N R, 1915, p 198) —The following non-proprietary preparation has been accepted

Mercury Cyanide Merck—Manufactured by E Merck, Darmstadt, Germany (Merck and Co New York)

POTASSIUM MERCURIC-IODIDE (See N N R 1915, p 203) —The following non-proprietary preparation has been accepted

Mercury and Potassium Iodide Merck—Manufactured by E Merck Darmstadt, Germany (Merck and Co New York)

TYPHOID VACCINE (See N N R 1915, p 324) — Swan-Myers Company, Indianapolis

Swan's Typhoid Bacterin (No 44) (*Prophylactic*) —Marketed in packages of three 1 Cc. vials of which one contains 500 million and the other two each 1 billion killed typhoid bacilli also in packages of six 1 Cc. vials two of which contain each 500 million and four vials contain each 1 billion killed typhoid bacilli

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SATURDAY, NOVEMBER 27, 1915

THE INHERITANCE OF ABNORMALITIES

Modern science has clearly demonstrated that many conditions once ascribed to hereditary factors can no longer be regarded as inherited. The overwhelming majority of the cases cited as instances of the influence of maternal and paternal impressions on bodily features are clearly not cases of inheritance in the strict sense, for the "impression" has almost always been reported to occur after conception. Mutilations are no longer believed to be capable of transmission by inheritance. More significant than all of these instances, however, is the demonstration, due to the modern science of bacteriology, that there is no such thing as the true inheritance of specific infectious diseases. The accepted etiologic rôle of micro-organisms in these pathologic conditions has excluded the possibility of a hereditary smallpox, tuberculosis or syphilis, for example. At first, when the untenability of the older views became apparent, it was customary to refer to the inheritance of a "tendency" to these diseases, of a "weakened constitution" especially predisposing to them. When the true mode of transmission of the infections became better understood, it was easy to see that in some cases, at least, what is "inherited" is an unfavorable hygienic environment—an opportunity for exposure to the dangerous surroundings that had been the real menace to the victims of a previous generation, rather than disease itself.

To say that "specific infections are not inherited, but are of postconceptional acquirement" does not by any means imply that there is no inheritance whatever of conditions which have a pathologic significance. Familial inheritance of abnormal conditions is too common to have escaped notice. The growing interest in the scientific aspects of heredity and the development of a real experimental science of genetics have put new enthusiasm into the study of human anomalies of all kinds — to peculiarities or perversions of anatomic form, temperament, mentality and metabolism. The investigation of the mendelian and other theories of inheritance has disclosed so much of importance that it has become popular among medical writers to subject instances of alleged "constitutional tendencies" to the critical analysis of succession demanded by the newer hypotheses.

Certain qualities seem to be transmitted from parent to offspring either completely or not at all. The manner in which such characteristics are transmitted follows a plan, in many instances, familiarly known as Mendel's law. This postulates certain characters as dominant and others as recessive. If both characters relating to a particular part or function are present together in one individual, the latter will exhibit the dominant type. Many characters can be brought under this law, but in some cases the mendelian principle seems to fail. Thus in man the progeny of a cross between a white and a black race are more or less intermediate between the two in color. The offspring are frequently of various degrees of brownness, rather than definite black or white individuals.

Enough has been indicated to suggest the importance of considering supposed hereditary defects from the standpoint of these modern hypotheses. Among recently considered cases belongs the constitutional tendency to brittle bones. Weakness of the long bones may arise from a number of pathologic conditions affecting the bones, but the typical fragilitas ossium or osteopsathyrosis runs through families. An examination of a large number of family histories by Davenport and Conard[1] shows clearly that heredity in osteopsathyrosis is typically direct, that is, the factor which determines the irregular bone formation is a dominant one. The view that it is due to "some disturbance of metabolism of the mother" is disproved by the instance of twins, described by Schwarz and Bass, one twin showed osteopsathyrosis at birth while the other did not. The rare exceptions to the rule that a generation is not skipped are explained by the well-known principle of imperfection in dominance or possibly by a lack of knowledge of an infantile condition of a parent. That osteopsathyrosis depends on a single dominant factor is further indicated by the fact that the proportion of children in an affected fraternity that shows osteopsathyrosis is approximately half—actually 55 per cent. According to these investigators of the Eugenics Record Office, Davenport and Conard, the presence of biotypes can be recognized. In some families the slightest pressure results in fracture, in other families the bones are fairly resistant. The commonest bone to break is the femur, but in some families the humerus seems especially weak, and in still others the clavicle is frequently broken. Thus, associated with the imperfect bone development are special family traits which modify the result.

Expressing the outcome of these studies in a somewhat different way, it appears that of a parent exhibiting the features of hereditary fragility of the bones in early life, at least half of the children will be similarly affected. But if neither parent, though of affected stock, has shown the tendency, then expectation is that none of the children will have brittle bones Moreover, when a parent is affected, it is possible that his children will show the tendency at about the same time of life, in the same bones and to the same degree as he himself showed it Davenport and Conard state that an association of osteopsathyrosis with blue sclerotics has often been pointed out The condition of blue sclerotics also appears to be a dominant trait

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[1] Davenport, C. B., and Conard, H. S.: Hereditary Fragility of Bone, Proc. Nat. Acad. Sc. 1915, 1, 537.

In similar ways the relation of digital abnormalities to pedigree has been investigated by Manson[2] Such peculiarities as syndactylism and polydactylism require no special skill in diagnosis, so that statements regarding them are likely to acquire a considerable degree of accuracy Manson has obtained the statistics of the descendants of a man living in Wales about the beginning of the nineteenth century who was affected with webbing of the third and fourth fingers of the hand, and had six toes on each foot Of the sixty-four descendants investigated, twenty-seven were affected with similar abnormalities, thirty-three were unaffected, and four were doubtful Both the syndactyly and the polydactyly appear as a dominant character The abnormality appears in the offspring of an affected parent, and either sex may transmit it The offspring of unaffected parents are always free from it

In the family here reported on, sesamoid bones are present in the majority of the affected hands at the second, third and fourth metacarpophalangeal joints where they are not usually present in normal hands Inasmuch as these bones are frequently present in embryonic hands, Manson infers that in the affected hands the processes of absorption are below normal

THE ACIDITY OF THE GASTRIC SECRETION

It is somewhat surprising that the remarkable contributions to physiologic science by William Beaumont were not promptly followed by a succession of studies in the same field For many years—almost to our own generation—writers on medical subjects related to digestion were content to quote the findings and the conclusions of the pioneer American physiologist as the final verdict Nevertheless, it was clearly understood in Beaumont's time that his statements were by no means to be implicitly adopted Thus we read "The rapidity of digestion, as the author himself shows, varies greatly according to the quantity eaten, the amount and nature of the previous exercise, the interval of the preceding meal, the state of health and of the weather, and also the state of the mind But in scarcely any of the experiments have these conditions been carefully noted "[3]

Good clinical usage should be based on sound physiology Recently a revival of interest in gastric physiology has occurred, beginning with the widely quoted work of the Russian physiologist Pawlow Carlson of Chicago has contributed a series of fundamental observations which have been referred to from time to time in The Journal Attention has been directed to the fact pointed out by Boldyreff[4] that the actual acidity of the human gastric juice is considerably greater than that which the customary figures reported after the examination of a test meal would lead one to surmise In conformity with this, Carlson[5] has also demonstrated, notably in two cases of gastric fistula in man, that normal human gastric juice (appetite secretion), when secreted above a certain minimum rate, shows a practically constant total acidity of nearly 0 5 per cent hydrochloric acid, or the same as the gastric juice of the dog According to Carlson, this uniform and constant acidity is true for man only in regard to the "appetite, digestion and hunger juice," secreted at a fairly high rate He states that we must take cognizance of the equally important fact that the normal gastric mucosa is capable of secreting a juice of submaximal acidity The contents of the "empty" stomach, and the continuous or hunger secretion (when the secretion rate is low) have a uniformly lower acidity than the appetite juice The total acidity of contents of the "empty" stomach is about 0 2 per cent, in terms of hydrochloric acid, a figure frequently given by clinicians as the acidity of the pure gastric juice of normal persons When the secretion rate becomes higher, the acidity increases, but never exceeds that of the juice which flows under the stimulus of the appetite

According to the foregoing facts, the normal human gastric juice, provoked by a suitable stimulus, is equal in total acidity to the maximum acidity reported by clinicians for so-called hyperacidity in man Carlson insists that there is no evidence that the gastric glands under any pathologic condition are able to or do secrete a juice of higher than normal acidity In fact, the presence in the stomach of gastric juice of full acid strength leads, by itself and immediately, to no untoward symptoms

Why, then, are figures lower than 0 5 per cent so frequently and commonly found for gastric juice? Boldyreff[6] believes that the most important factor in lowering the acidity of gastric juice from that actually secreted by the gland (0 5 per cent as hydrochloric acid) to that usually found in the cavity of the stomach (0 25 per cent) is the entrance of intestinal contents (pancreatic and intestinal juice and bile) into the stomach Carlson, who accepts this interpretation, suggests that it is this mechanism for self-regulation of the acidity of the stomach content which breaks down in cases of so-called hyperacidity in man He adds that in cases of "hypersecretion" the quantity of juice secreted is greater than normal, and the secretion may persist in the absence of all normal stimuli, but the neutralizing factors suffice to reduce the acidity of the juice approximately to that found in the normal stomach It is purely a balance of secretion rate and neutralization capacity It follows that impairment of the neutralization factors or very excessive rate of gastric secretion would tend to render the acidity of the gastric content equal to that of pure gastric juice, in other words, to produce clinical "hyperacidity"

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[2] Manson J S Hereditary Syndactylism and Polydactylism Jour Genetics 1915 v 51

[3] Beaumont William Experiments and Observations on the Gastric Juice and the Physiology of Digestion Edinburgh 1838 p 37, footnote by Dr Combe

[4] Boldyreff Quart. Jour Physiol 1914 viii 1

[5] Carlson A J Contributions to the Physiology of the Stomach XXV A Note on the Chemistry of Human Gastric Juice Am Jour Physiol 1915 xxxviii 248

[6] The Actual Acidity of Human Gastric Juice, editorial The Journal A. M A. Aug 15 1914 p 580

Carlson[5] has also offered a suggestion in partial explanation of the continuous secretion of gastric juice which may be observed It is well known that products of digestion may act as secretory stimuli The proteins of pure gastric juice undergo digestion in the stomach cavity By yielding gastric secretagogues, this autodigestion of the gastric juice itself may be a factor in the continuous secretion of the stomach

SOME ASPECTS OF LACTATION

Science has often cherished the hope of finding specific stimulants for the individual glands or organ functions In the days when the now discarded expression "biliousness" was popular, great expectations were awakened by the possibility of finding a cholagogue which might in some way promote the physiologic activities of the liver Indeed, cholagogic potencies were at one time ascribed to a number of familiar drugs, and actually received the endorsement of serious investigators It was later demonstrated, however, that the evidence regarding the promoting effect of the selected substances on biliary secretion was either not valid when observations were extended over a sufficiently long period, or they were misleading in that the drug merely produced muscular effects along the biliary tract so that a more immediate discharge of bile simulated an increased secretion in the sense of new production Thus far, bile alone has proved to be a true cholagogue

A somewhat analogous experience appears to be in progress in the case of the mammary gland The possible occurrence of real galactagogues — agents which will promote the production of milk by stimulating its secretion — has long made an appeal both to the dairy farmer and to the physician who is interested in the problem of lactation in women Not long ago we commented on the recent observations that the extracts of certain glands appear to cause an immediate effect on the flow of milk from lactating animals[1] The explanation of this peculiar response, which could be provoked by injections of suitable pituitary extracts, for example, was not entirely clear at first, although the observation itself was verified by several competent physiologists and on a variety of animal species Obviously, if the result is merely a mechanical action giving rise to a sudden discharge of stored milk, its significance would be quite different from that of an action on the secreting mammary cells whereby they are stimulated to augmented activity, as the pancreas is after an injection of secretin into the circulation Augmented milk production and accelerated discharge of milk are by no means of equal import or necessarily identical

As the outcome of a series of experiments at the University of Chicago, Gaines[2] has come to the conclusion that the transient outflow of milk after injection of pituitary extracts is not at all due to secretory performance of the gland cells, but can be explained as a muscular phenomenon The substance causes a muscular constriction of the milk ducts and alveoli, with a consequent expression of the milk present Accordingly, the temporary flow of milk produced by such injections is entirely dependent on the amount of milk in the gland The muscular character of the response can be demonstrated on an active mammary gland inflated with air, and even in an excised gland devoid of any circulation The nonlactating gland, up to a late stage in pregnancy, is not sensitive to the pituitary substance This difference in the response of the contractile tissue of the mammary gland, according to its stage of functional activity, finds an analogy in the unlike effects of epinephrin on the gravid and virgin uterus, respectively

An active increase of pressure in the mammary gland closely resembling this effect of the pituitary product is caused by the simple act of nursing Milking excites a similar reflex contraction of the gland musculature and an expression of milk, though in lesser degree than normal nursing Of late it has been believed that the removal of milk from the mammary gland goes on quite independent of the nervous system Gaines, however, has furnished strong presumptive evidence of a reflex, which can be completely inhibited by anesthesia He believes that the stimulus which naturally excites this conditioned reflex must be found in the friction and sucking movements of the young acting on the cutaneous organs of the teat The reflex arc is conceived to be dependent at times on the psychic condition of the mother, for the failure of vigorous nursing to secure milk under certain conditions (as in anesthesia or during the absence of the sucklings and consequent maternal concern) indicates that the removal of milk is not purely passive with respect to the activity of the gland In the animals studied, the return of the young, after separation from the mother, greatly augmented the effect of nursing or milking It is even reported that with the gland under extreme tension, a contraction of the musculature and an actual ejection of milk in a spurt may follow the signs of maternal concern It is said that the mother whale ejects milk from her mammary gland into the mouth of the young without the active sucking commonly observed in other mammalian species

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[1] Pituitary Extract and Milk Secretion, editorial, The Journal A M A, Dec 26, 1914, p 2292

[2] Gaines, W L A Contribution to the Physiology of Lactation, Am Jour Physiol, 1915, xxxviii, 285

It has been doubted whether the capacity of the ducts and alveoli of the udder is as large as the volume of milk yielded at one time In the case of the goat, the species particularly studied by Gaines, the indication is that practically the entire quantity of milk obtainable at any one period is present preformed in the udder There is no reason, he argues, why the milk should not be regarded as being accumulated in the udder during the intervals between milkings, and the milking operation regarded as a more or less effectual method of stimulating a reflex The latter may thus be conceived to cause a contraction in the gland musculature, resulting in the discharge or ejection of a greater or lesser part of the milk present, according to the effectiveness with which the reflex is excited The problems of this suggested muscular mechanism, and its location, structure and innervation, are still to be elucidated

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TIME RELATIONS IN METABOLISM

The time relations of metabolism are beginning to arouse the attention of investigators This is the result of the advance in knowledge of the biologic performances of the organism In earlier days it represented progress to be able to contrast the beginning and the end results of metabolism, to measure accurately the intake and output of matter and energy, and to account exactly for the expenditures of the organism This no longer suffices for the properly inquisitive physiologist He is determined on learning where and how the intermediate stages of nutrition are carried on, so that each step in the fundamental chemical changes in the living body can be followed The pathology of nutrition has thus gained a broader outlook In the future, defects of function are to be located more specifically It will no longer suffice to say that sugar is not burned up in some individual organism, and to designate this with the indefinite label of the diabetic The deranged organ or the perverted mechanism must be discovered Only in this broader way is there an opportunity for real therapeutic progress

Proteins are highly complex substances far removed, in a chemical sense, from the simple end products in the form of which they leave the body One might reasonably expect, therefore, that the story of this conversion would be a long one and that the time required for the disintegrative changes of protein digestion and metabolism would be correspondingly extended The series of links in the chain of successive transformations is a long one Digestion, absorption, transport and location in some tissue or other, synthesis or destruction, removal of the products and return to the blood stream, excretion—every step requires some time

It has been shown that of the ultimate products of protein digestion—the amino-acids—the simpler representatives, such as glycocoll and alanin, require for their metabolism under optimal conditions a period of about nine hours' duration until the nitrogenous end products are recovered in the urine[1] This period corresponds in a general way with the time relations for a comparable part of the protein molecule ingested as such[2] By the use of the drug phlorhizin, which induces a condition of experimental diabetes in animals whereby a large portion of the protein metabolized in the body is excreted in the form of unoxidized sugar, both the nitrogenous and non-nitrogenous metabolic products of proteins and amino-acids can be studied When protein is fed to a phlorhizinized individual, the urea and the glucose derived are excreted quite promptly

Data are now available for the rate of metabolism of both proteins and amino-acids fed under the conditions noted It is likewise known precisely how long a time is required for the reappearance of glucose itself fed to an animal rendered temporarily diabetic with phlorhizin It appears[3] that the entire series of metabolic changes leading to the synthesis of glucose from amino-acids and its excretion may occupy a period of time only slightly in excess of that necessary for the simple absorption and elimination of the corresponding amount of ingested glucose Janney[3] has shown essentially the same relations to exist after feeding a variety of typical proteins themselves It follows, as he points out, that the rate of metabolism of proteins may be practically identical with that of amino-acids The time required by the organism to effect digestion of the complex protein molecule into amino-acids, and the metabolism of the latter is scarcely longer than that required for the simple process of absorption and elimination of glucose (in the diabetic) This emphasizes the unexpected relative rapidity characteristic of metabolic reactions, for the chemical and physiologic changes involved include the digestion, that is, hydrolysis of protein into complex and simpler polypeptids, their further breakdown into amino-acids, absorption of these products, denitrogenization, the synthesis of glucose and urea, and the final elimination of these end products

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[1] Csonka F A. Jour Biol Chem 1915 xx 539

[2] Janney N W Jour Biol Chem 1915 xx 321

[3] Janney N W A Note on the Rate of Metabolism of Proteins and Amino-Acids Jour Biol Chem 1915 xxii 191

In this connection, it is interesting to compare the time relations of a quite different physiologic process for which figures have recently been supplied from the Department of Physiology at Columbia University[4] It is now well known that foreign fats, as well as certain fat-soluble substances, such as some of the plant pigments, readily find their way into the secretion of the mammary gland Bowes[4] fed arachis oil, which contains about 5 per cent of arachic acid, to a lactating animal, and watched for the appearance of this readily identified substance in the milk The result demonstrated that the time required for the ingested fatty acids to appear in this way is not over twelve and one-half hours, and probably less

THE LOSSES OF WEIGHT DURING STARVATION

During starvation, body materials are necessarily used up to supply the energy requisite for the vital functions Some of the organs, like the heart and the respiratory muscles, are maintained in continued activity independent of the intake of food, while life lasts The result is well known The body loses weight during inanition, owing to the consumption of some of its own tissue substances This process of nutrition at the expense of one's own tissues may go on not alone for days, but even for weeks Fasts exceeding a month in duration are not at all uncommon in the literature of physiology[5]

Whether or not all tissues participate to a comparatively equal degree in the depletion brought about by starvation is a question which has long interested investigators Statistics on the relative losses of weight in the case of different organs were collected more than half a century ago The brain, heart and respiratory muscles, such as the diaphragm, were found to undergo little loss of weight for a long time Hence arose the teleologic explanation that those organs which are most necessary for the maintenance of life are protected, as it were, from depletion It might be assumed that those organs which are most active, and therefore require most energy, would show the greatest loss of weight But this does not follow in fact It is true that the nutritive needs of a tissue are determined by its activity, but inasmuch as the circulating fluids offer a common store of energy to be drawn on, the active tissues of the body can easily appropriate the materials set free elsewhere, and maintain their integrity at the expense of other parts

A tenable explanation[6] of the varying losses of weight in the organs during starvation appears to be offered by the new investigations of Jackson at the University of Minnesota Actual measurements show *that with respect to the relative loss in weight during inanition, the organs may be divided into three groups* In the first group, which includes the suprarenals, thyroid, skeleton, eyeballs, spinal cord and brain, and thymus, *there is little, if any, loss in absolute weight* during inanition, and a corresponding increase in relative weight In general, there is a relatively greater loss during chronic inanition, which is especially marked in the case of the thyroid gland The thymus, having already undergone age involution, is affected only slightly, if at all In the second group, which includes the kidneys, hypophysis, heart, testes, lungs, musculature and integument, the loss in absolute weight during inanition is more nearly in proportion to that of the whole body, so that their relative weight is usually not greatly changed In all except the hypophysis, however, the loss is relatively greater during chronic inanition Especially the lungs, testes, integument and musculature appear to lose markedly during chronic inanition In the third group, including the spleen, liver and alimentary canal, the loss in absolute weight is *relatively much greater than in the body as a whole*, so they decrease in relative as well as in absolute weight

To explain these facts, Jackson inclines to the view of Paschutin, who stated that the various organs lose *in proportion to their storage content of available food supply* The various proteins, fats and carbohydrates are dissolved and carried away by the circulation at *different times and with different degrees of rapidity* Thus the variability in the loss of weight in different organs and in different types of inanition would be ultimately explained primarily on a chemical basis In the absence of a food supply, the animal organism deals with the resources of its tissues with an economy referable to the peculiarities of its composition

Current Comment

HEALTH DISTRICTS IN NEW YORK CITY

A pamphlet recently issued by the Department of Health of the City of New York reports an interesting experiment in municipal health administration which has been carried on during the past year Sept 30, 1914, the commissioner of health issued an order establishing an experimental health district within which all the functions of the health department were to be locally directed This district is bounded by Scammel, Division and Clinton streets and the East River, the objects being to try out the plan of local health administration, to avoid the overlapping of different bureaus and departments and to increase the usefulness of the department of health through the establishment of intimate neighborly relations between the department of health and the community It is obvious that with the continued growth of our larger cities, the municipal department of health will become as abstract and impersonal an institution as is the state department of health to the majority of the inhabitants of the state. Health District No. 1 is situated in the seventh ward of the lower East Side, in one of the most densely populated districts of New York. The twenty-one city blocks cover approximately 63 acres, with a population of about 35,000. Permanent quarters were secured in which three rooms are used for a milk station. On the walls appear placards and photographs of health exhibits, together with pictures illustrating the work of the street cleaning, tenement house and fire departments. Room has also been provided for afternoon and evening meetings of girls' leagues, boys' health leagues, parents' meetings, etc. Four rooms contain the offices of the district commissioner, the visiting nurses, tenement house inspectors, and others. From this office is carried on the work in the district on infant feeding, preschool and school examinations, midwife and foundling supervision, infectious disease supervision, food inspection and sanitation. The staff consists of a health officer, a medical inspector, one nurse each from the milk station, school group and infectious disease district, one nurse's assistant, one food inspector and one sanitary inspector. Each block in the district is numbered, and for each family an envelope is provided in the office files. These envelopes are grouped by houses and by blocks. A separate record is also kept of each house. Educational pamphlets were distributed to the people of the district by inspectors and officers direct to the patrons of the milk station, to the boys' and girls' leagues and to the parents' conferences. Mothers' meetings are held at the milk station, and talks given by the nurses on the care of the baby. The physicians located in the district have been organized into a local physicians' advisory committee. The various relief societies and the social agencies working in the district have been banded together as a local relief committee. Principals of the public schools, superintendents of hospitals, directors of social organizations and local civic workers have been organized into a general advisory committee. While the report covers only the first six months' work, it has already been demonstrated that the work of the health department has become a concrete matter to the inhabitants of the district. The district office is now recognized as a place where the people can come for guidance on health matters. The district staff has developed an interest in and a knowledge of the individual and in the various health conditions of the community. Many small matters have been adjusted directly at the district office without delay and without burdening the officials of the city health service. The cooperation between physicians and nurses has produced better results, the interest of the people in the exhibits and the literature has been marked, and the local organizations and individuals have been enabled to render much effective aid to the health department in developing a community health program. This most interesting experiment is worthy of the careful study of the health officers of all our larger cities. There is little doubt that, in the development of our great centers of population, much has been lost in the way of personal influence and acquaintanceship. Experimental Health District No. 1 is an effort to bring the public health work of our cities into closer relation and usefulness to the individual.

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[4] Bowes, O C The Rate of the Passage of Fatty Acid of Food into the Mammary Glands of the Goat, Jour Biol Chem, 1915 xxii 11

[5] Prolonged Fasting, editorial, The Journal A M. A, Sept 11, 1915, p 956

[6] Jackson, C M Effects of Acute and Chronic Inanition upon the Relative Weights of the Various Organs and Systems of Adult Albino Rats, Am Jour Anat, 1915, xviii, 75

THE EFFECTS OF INHALATION OF CHLORIN GAS

The use of poisonous gases as a mode of warfare in the present European conflict has been attended with severe physiologic effects on the individuals who have been attacked by them. A few records are available of the responses of the animal organism to very dilute concentrations of chlorin and bromin, but they shed little light on what has lately been observed to occur when soldiers are "gassed" on the battlefield by the vapors of these elements mixed with air. Evidently the concentrations of the noxious gases in the atmosphere under the conditions in which they are employed in attack is greater than is generally encountered under any other likely condition such as might ordinarily arise in industrial works. Sir Edward Schäfer,[1] the Edinburgh physiologist, has demonstrated in a recent experimental investigation of the subject that the result of the inhalation of chlorin gas is always serious. When the content in the respired air is relatively small, no effect may be visible for some minutes, after which time a profound change takes place, sometimes with great suddenness. The conspicuous symptoms of the sudden change include a fall of blood pressure and a slowing or interruption of respiration. On the substitution of air for the gaseous mixture, a recovery may result if the content of chlorin has not been too large. Inasmuch as the inhaled chlorin cannot be carried to the tissues in a free state, the effects mentioned must be due to something happening in the lung. The "vitality" of the tissues is not lost, for the muscles and nerves are still irritable in the usual manner immediately after death, and the heart may also be responsive to appropriate stimuli. The lungs, however, invariably give evidence of the damage done by the inhalation of chlorin. Even after the shortest exposure to a fatal dose, they become intensely red and congested, either all over or in innumerable patches. There is room for considerable speculation as to the varied effects which might be produced locally in the lung by an irritant gas like chlorin. As Schäfer has pointed out, it may directly affect the bronchial musculature or the vascular musculature, it may stimulate the mucus-secreting mechanism of the air tubes, it may influence the coagulability or viscosity of the blood within the pulmonary vessels, or it may produce reflex effects by exciting the endings or afferent nerves within the lungs. Schafer's own investigations point to the conclusion that chlorin produces its fatal results by causing obstruction of the pulmonary vessels, amounting in some cases to complete stasis, and not by causing contraction of the bronchioles. The pulmonary capillaries are found to be gorged with blood, and there is an extraordinary amount of edema in the interstitial tissue of the lung

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[1] Schafer, Edward: On the Immediate Effects of the Inhalation of Chlorine Gas, Brit. Med. Jour., Aug. 14, 1915, p. 245.

The edema is presumably secondary to the vascular obstruction Apart from this, the tissues of the lung in cases of death by chlorin gas inhalation are normal, the epithelium cells of the bronchial tubes being well preserved, and little increase of mucus being evident Information regarding the effects of inhalation of bromin vapor is still rather scanty It appears, however, from Schafer's statements, that although much more irritating to the conjunctival mucous membrane, bromin is less deleterious to the respiratory organs than chlorin, the fulminating effect of which appears to be absent in the case of bromin

EMOTIONS AS CAUSES OF ORGANIC DISEASE

Skeptics have not been wanting who doubt the alleged influence of the mind on the physical organism, partly because of a materialistic philosophy dominant in scientific circles, but chiefly because of the difficulty of understanding how such influences could produce permanent bodily changes Evidence to satisfy all the canons of inductive logic is now available not only to prove conclusively that emotions may operate in such a way as to cause organic as well as functional diseases, but also to show the exact mechanism by which the sympathetic nervous system, cooperating with certain of the ductless glands, may produce pathologic conditions Naunyn reported a case of diabetes mellitus, the cause of which was an emotional shock The Allen treatment of pancreatic diabetes, by means of starvation, recognizes the possibility of a "functional" disturbance of the pancreas, which may disappear with rest Osler cites violent emotion, such as fright, in his account of the etiology of diabetes insipidus Diseases of the skin, as alopecia areata, may have an emotional origin The mechanism by which such profound organic disturbances are brought about is the autonomic nervous system The rôle of this system in producing emotions has been studied over a period of years by Cannon and his pupils[1] Beginning with the well-known fact that the autonomic nervous system takes its origin from the cranial-cervical, thoracic-lumbar and sacral regions of the cerebrospinal axis, Cannon attempts to correlate the activity of these portions of the system with three distinct types of emotions Furher, he points out as a result of physiologic experiment that whenever the innervation from the thoracic-lumbar (sympathetic) portion of the system meets, in a viscus, the innervation from either the cranial-cervical or the sacral portion, there is always an opposition of the effects produced In the eye, the contraction of the pupil is due to impulses received from the cranial autonomic, while the dilation of the pupil is effected by nerve fibers which come from the thoracic portion of the sympathetic Again, the secretory and tonic motor innervation of the stomach come through the vagus nerve from sympathetic neurons which have their origin in the cervical division of that system Stimulation of the splanchnic nerves causes an inhibition of both the secretory and motor functions of the stomach The viscera of the pelvis are likewise doubly innervated The autonomic neurons from the thoracic-lumbar segment cause relaxation of the lower end of the intestine The sacral autonomic fibers for the same organ cause contraction The bladder and reproductive organs are similarly innervated Corresponding to the three parts of the autonomic system and the organs associated with them, there are three types of emotional response The cranial portion of the system, by regulating the secretion and motion of the digestive organs, is concerned with building up the reserves of bodily strength The emotions correlated with these physiologic activities are bodily satisfaction and well being The sympathetic system is concerned especially with the functions of the suprarenal gland The physiologic effects of the secretion of this gland are identical with the effects of stimulating the thoracic-lumbar sympathetic system the pupil is dilated, the heart is accelerated, the functions of the stomach are inhibited, and the glands of the skin and the erector muscles of the hair are excited Glycogen in the liver is liberated in the form of dextrose, with the result that sugar is available for muscles The emotions which call for a sudden summoning of muscular energy are rage and fear, since correlated with them are the instincts of fighting and flight The functions of the pelvic viscera are mainly in the nature of emptying accumulated secretions The emotions depending on these functions are those of satiety and repletion The conclusion is then evident that emotions may cause all of the changes which are produced by the autonomic system The vascular changes thus produced have long been known, but the intimate relation between the suprarenal gland and this system has only recently been demonstrated The case for emotional etiology of some diseases is thereby greatly strengthened

A METHOD OF ATTACK ON POVERTY AND TUBERCULOSIS

The New York Association for Improving the Condition of the Poor has just published a report on the results of the first two years of its Home Hospital experiment The methods adopted in this experiment were described in The Journal last year[1] It is based on a recognition of the fact that tuberculosis is not merely a human disease but also a social disorder The problem among the tenement poor is often that of loss of self-respect and standards of living in the family, as well as loss of health in the tuberculous member The association has found that by transplanting the whole family to suitable surroundings under adequate supervision, it is possible to preserve the family unit, and in some cases to rehabilitate it physically, socially and economically, while caring for the tuberculous patient Many patients in the early stages of tuberculosis have been cured, while improved health and earning capacity have been attained for others whose cases were moderately advanced Meanwhile, the well members of the family, especially the children, have been protected from infection, and their physical condition improved The family's total earning capacity has also been increased and its standards raised The cost of this combined social and physical treatment of the whole problem has been found less than that of sending the breadwinner or homemaker to a hospital and either placing the dependents in institutions or supplying necessary relief at home The Home Hospital plan, moreover, has a profound advantage over the other method in that the whole family is being taught proper habits and helped back to a normal self-supporting existence while the disease is being treated in one or more of its members The hospital now has, on an average, about 130 patients and over 200 inmates The demand for its services is so great that the intention is to make it permanent and to increase its size The association disclaims any intention to supplant other much-needed agencies already in the field The success of the Home Hospital experiment, however, must inevitably suggest the question whether it is not possible that in our tuberculosis campaign we have directed our attack too exclusively toward the disease as it exists in the individual If tuberculosis is a social disorder, before we can hope to exterminate it, we must strike at its social roots

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[1] Cannon, W B Bodily Changes in Pain, Hunger Fear and Rage in Account of Recent Researches into the Function of Emotional Excitement, New York, Daniel Appleton & Co, 1915

[1] A Hopeful Experiment in the Treatment of Tuberculosis Miscellany, The Journal A M A, March 28, 1914, p 1043

THE WAR AND MEDICAL EDUCATION IN ENGLAND

According to the *British Medical Journal* there has been a decided falling off this year in the number of young men entering on the study of medicine The number of medical students entering Cambridge is 41, as compared with 64 last year and 116 in 1913 There has also been a general falling off of students entering the medical schools in London At St Thomas Hospital, the entry is only about 45 per cent of the average At St Mary's Hospital the attendance of students is about 23 per cent of the average for the three years prior to 1913 At King's College Hospital Medical School the attendance is only 11 per cent of the average, at Guy's Hospital it is only 10 per cent of the average and at St. Bartholomew's Hospital, only 2 per cent At University College Hospital Medical School the entry is only a little below the normal, while at the London Hospital Medical School the entry is only 5 per cent below the normal, and is actually larger than in 1913 Even with the reduced attendance as just indicated, it is believed that the number will be still further greatly reduced, since many of the students who have entered this year, it is expected, will shortly enlist in the army The entry for special postgraduate classes has likewise declined, the reduction being 62 per cent, as compared with the average figures for the three years before the war In contrast to the reduction in the number of male medical students the enrolment at the London School of Medicine for Women has increased, 110 having entered this fall, as compared with sixty-nine last year and an average of forty-four in the three years preceding the war

A NAUSEATING PUBLICITY

Sensational medical articles in newspapers have become a common, every-day occurrence Pathology is now a breakfast table topic and the science of eugenics agitates the fluttering breasts of stately matrons and young debutantes at afternoon teas The most recent sensation concerns the action of a Chicago physician regarding an infant marred by various anomalies of development The newspapers featured the case, they elaborated it with gossip and discussion, with opinions from physicians, with the statements of social workers and psychologists, with letters of mothers and even of crippled and imbecile children And the end is not yet One newspaper publishes an autobiography of the physician, who promises to write, in serial form, the story of the case The whole incident is nauseating Infants with similar anomalies are born almost daily, no two cases are exactly alike, each is a problem unto itself In this instance, apparently, the rights of the individual have been flippantly considered and the sacredness of the home has been ruthlessly bandied in public Nothing has been nor can anything ever be gained by such disgusting discussion as has accompanied this particular incident One person has been basking in the limelight of publicity, but in this instance it is not the brightness of the spotlight but a yellow sickly flame

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education public health etc.)

ILLINOIS

Drug Addict Attacks Physician—A cocain addict of Galesburg entered the office of Dr George D Prewett, Peoria November 5 and demanded cocain, and when refused attempted violence.

Personal.—Dr John H Riley, DeKalb, who has been ill for several weeks, is now reported to be improving——Prof Oliver H. Moore of the University of Illinois, who has recently returned from the war zone, gave a talk before the Y W C. A. at Champaign, November 15, in which he related his experiences with the Red Cross in France.——Dr Warren R. Rainey Salem, who is on duty in France, writes that he and Mrs Rainey expect to return home before Christmas——Dr Oscar B Stafford, La Salle, was seriously injured in a collision between his buggy and an automobile, November 10——Dr William G Bechtold, Breese, who has been seriously ill with tetanus, is reported to be convalescent.

Chicago

Fresh-Air Cars—Sixty surface street cars, five operated on each of twelve lines were placed in service, November 21 as fresh-air cars Each car had its windows and doors open and bore signs Fresh-Air Car" The company announces that the experiment will be continued indefinitely It is too early yet to determine whether or not it will be a success

Diphtheria Carriers—During October 15,234 throat cultures from children were examined by the laboratory of the Department of Health Of these, 656 were found to be carriers of the diphtheria bacillus, which means that they were innocent sources of danger to other children with whom they came in contact According to the bulletin of the Health Department 22 572 diphtheria specimens were examined during the month This number included 7 338 specimens from known cases of diphtheria The figures show that twenty-five suspected cultures were examined for each positive case found The bulletin says that this might seem to be a small percentage of positive cases, but, when it is considered that over 600 children were potential distributors of this disease, the importance of these examinations will be realized, as it has long been known that the diphtheria carrier is the most prolific source of the spread of the disease

The Case of the Bollinger Baby—During the last few days the newspapers have been publishing more or less sensational statements regarding the case of a child born defective who was, it is alleged allowed to die, when an operation might have saved its life

The essential malformations of the body, as disclosed by the records of the coroner's office, were as follows

> Imperforate anus, fusion of the two kidneys into one, located on the left side and with a single ureter, absence of the right external ear and of the external auditory canal, a defective development of the skin over the shoulders, especially the right, causing an apparent shortening of the neck, absence of all or part of the coccyx and absence of the right testicle.
>
> The acquired pathological conditions were Small extradural hemorrhages in the spinal canal small subpleural hemorrhages, a discharge from the nose and the Coroner's physician reports an area of hemorrhage in the pia mater in the left Sylvian fissure

INDIANA

Tuberculosis Hospitals—Two tuberculosis hospitals are being constructed for Blackford County by the Red Cross Society, one in Montpelier and the other at Hartford City

Whiting Physicians Organize—Physicians of Whiting met at the office of Dr George H Hoskins, November 7, and organized the Physicians' Club of Whiting, electing Dr George H Hoskins, president, and Dr Chauncey M Gillespie, secretary-treasurer

Epidemic of Gastro-Intestinal Disorder—More than 1,000 cases of some form of gastro-intestinal trouble occurred in the northern part of Indianapolis last week. Dr Herman G Morgan, sanitarian, after eliminating all other causes but that of water supply, has concluded that it is due to either bacteria or chemicals in the water Boiling the water has prevented a spread of the infection

Personal—Dr Frederick N Wright, Hazelwood, while hunting near Hazelwood, was injured by the accidental discharge of his shotgun and may lose his right foot——The house of Dr George W Grossnickle, Elkhart, was damaged by fire to the extent of $600, November 14——Dr Thomas B Eastman, a member of the Indianapolis Board of Health has been selected as a representative of that body on the advisory board which will consider the affairs of the city dispensary which has again been placed under the management of the Indiana University School of Medicine.

MARYLAND

Hospital News—The new Emergency Hospital Building, Easton, was formally dedicated, November 23

Leaves Large Estate—Dr Edmund C Rivers, Baltimore, who was drowned October 24, left an estate valued at $170,000

Hospital Wins Suit—The Sheppard and Enoch Pratt Hospital was successful in a suit against Baltimore city in regard to damage and assessment of benefits on property of the trustees condemned in the construction of the Key Hyway The hospital was finally awarded $1,705

Physician Gives Travelogue Lecture—Dr Henry O Reik, secretary of the board of managers of the Baltimore Eye, Ear and Throat Charity Hospital, is delivering a series of four travelogue lectures, illustrated by autochrome photographs The subject of the first lecture was "The Great Southwest and the Grand Canyon"

Neurologists Organize—The Baltimore Neurological Society was recently organized with a charter membership of seven Dr Charles M Byrnes was elected president, and Dr Daniel D V Stuart, Jr, secretary-treasurer One of the requirements for membership is that the applicant shall have published at least one contribution to neurologic study

Physicians Organize—The Physicians' Civic Club was organized at a meeting of physicians at the Medical and Chirurgical Faculty Building, November 11, with a charter membership of 100 Dr William T Watson was elected president, Dr Nathan R Gorter, vice president, and Dr Walter D Wise, secretary-treasurer Mr Frederick C Howe, commissioner of immigration of New York, delivered an address before the college [illegible] "An American City, Its

Pasteur Institute to Close—The Pasteur Institute at Mercy Hospital, Baltimore, is to be discontinued after the two patients now under treatment are discharged This decision was made on account of the recent reduction in the number of patients, the lack of work, the excess of expenses over income, and because the United States Public Health Service furnishes to reputable physicians, free of charge, the antirabic serum Nearly 2,000 cases of hydrophobia had been treated in the hospital since the institution became associated with it

Personal—Dr F Janney Smith, chief resident physician at Johns Hopkins Hospital, Baltimore, has been appointed resident physician to Ford Hospital, Detroit——Dr Ralph B Seem has been appointed first assistant superintendent to Johns Hopkins Hospital, succeeding Dr Karl H VanNorman, resigned——Dr Lewis A Sexton has been promoted from admitting physician to the directorship of the dispensary of Johns Hopkins Hospital——Dr Leonard G Rowntree assistant head of the department of medicine of Johns Hopkins University, has been appointed professor of medicine and chief of the medical department of the University of Minnesota——Dr David M R Culbreth, Baltimore, has been elected vice president of the Caroline County chapter of the Eastern Shore Society of Baltimore

MICHIGAN

The Ranney Bequest.—By the will of the late Dr George E Ranney, Lansing, a 20-acre tract is bequeathed as a memorial playground for the city

Personal—Dr Abner Hayward, Mt Clemens, is reported to be critically ill as the result of a cerebral hemorrhage——Dr James G Cumming, Ann Arbor, has been appointed chief of the bureau of communicable diseases of the State Board of Health of California

MISSOURI

Purchasable Factors in Public Health—Dr Allen W Freeman, epidemiologist to the United States Public Health Service, delivered an address at the luncheon of the Commerce Club, St Joseph, November 1, on "Purchasable Factors in Public Health"

Diphtheria Epidemic in Lamar—On November 11 the Lamar City Board of Health issued orders closing all opera houses, picture shows and other public entertainments and all churches and meetings to children of 15 years of age and under, on account of the epidemic of diphtheria which prevails in the city The lower grades of the city schools were ordered closed by the board of education until November 15

Kansas City School Physicians Named—Dr Paul Paquin, health director of Kansas City, has appointed twenty-nine physicians as medical inspectors of schools The examiners will serve gratuitously They will be given police power as sanitary inspectors, receiving free street car transportation, will examine children in each school at least once a week and will inspect school hospitals and grounds and report insanitary conditions to the health department.

Personal.—Dr J Elliott Royer, Kansas City, has returned after two years postgraduate study in Europe, the last twelve months of which has been spent as volunteer special neurologist in British military hospitals——Dr John N Baskett, Hannibal, was operated on in St. Louis, recently, for the removal of gallstones——Dr Luther A Todd has resigned as president of the St Joseph Board of Health——Dr Frank R Morley, Sedalia, is reported to be critically ill with septicemia——Dr John P Ralston, Springfield, suffered a second cerebral hemorrhage, October 25, and is reported to be in a serious condition

St Louis

Social Service Lecture—Dr Walter Fischel on October 25 delivered the third lecture in the course being given by members of the faculty of Washington University, under the auspices of the Department of Nursing and Social Service The subject of his lecture was "Tuberculosis and Its Significance on the Social Problem"

Federal Sanitation Bureau in St Louis—St Louis is to be district headquarters for the federal government's rural sanitation work Surg Mark J White, U S P H S, now in charge of the St Louis Marine Hospital, will supervise this work for the time being Ten or more rooms in the Marine Hospital building will be refitted for the purpose and from ten to twelve chemists of the department will be sent from St Louis to work in this field

Washington University Appointments—Washington University announced the appointment of Dr Leo Loeb to the newly established chair of comparative pathology in the medical school, Dr Philip A Shaffer PhD, has been appointed dean to date from June 3, 1915, Dr Borden S Veeder, has been promoted to assistant professor of pediatrics, Dr Robert A Gazell to associate in physiology and Dr Philip C. Jeans to instructor in pediatrics

Personal—Dr John A Pringle acting assistant superintendent of the City Hospital, is said to have made the highest grade in proficiency in the recent efficiency examination for superintendent of the institution, Dr James Lewald stood second on the list and Dr Eugene A Scharff, third——Dr Frederick A Baldwin, city bacteriologist, is suffering from a streptococcus infection of the right hand——Dr Ralph L. Thompson, recently returned from service on the western war front delivered an address before the City Club November 6 He also spoke before the members of the various alumni associations of the university

MONTANA

Deaconess Hospital.—An active campaign is being carried on in Miles City to raise $30,000 for the construction of a Deaconess Hospital

Sanitary Surveys Completed—Inspectors connected with the State Board of Health have completed sanitary surveys of the water systems of Great Falls and Helena

Professional Building in Bozeman—Physicians, dentists and lawyers of Bozeman have united in the erection of a professional building which will contain offices for members of the three professions

Personal.—Dr John W Frizzell, Great Falls, fractured his leg while cranking his car recently——Dr Thomas E. Murray, Great Falls, will spend a year in Arizona and Florida——Dr George H Putney Carter suffered a Colles fracture while cranking his automobile recently——Dr William G MacDonald Stockett left for Europe, November 18 where he will serve with the royal army corps——Drs William H Buskirk, Miles City, and Marcus H Heldman, Ismay, will spend a year in the East in postgraduate work.

NEBRASKA

State Hospital Foundation to be Laid—Foundations for the State Hospital of the Medical College of the University of Nebraska Omaha will be laid this winter The hospital will be four stories in height with three story wings and will have six wards with accommodations for 116 beds and twelve private rooms

NEW JERSEY

Dinner to Health Officer—A testimonial dinner was given to former Health Officer David D Chandler of Newark by about 200 of his friends, October 26

Contract for Tuberculosis Building Awarded—A contract has been awarded for the construction of a tuberculosis building for the New Jersey State Institution for Feeble-Minded Women Vineland The stipulated cost was $3,290

Physicians' Club Organized—The Physicians' Club of the city of Passaic was formally organized October 27 Dr John N Ryan was elected president, Dr Abraham Machlin vice president, Dr Gerard J Van Schott, Jr, secretary, and Dr Cornelius Van Der Clock, treasurer

Must Report Tuberculosis—Dr Charles V Craster, health officer of Newark, has issued a circular to the physicians of Newark calling attention to the requirements of the tuberculosis law of the state which he says is being continuously violated The law requires that every case of tuberculosis, as well as any other case of contagious or communicable disease be reported to the local board of health within forty-eight hours Physicians have been in the habit of not reporting tuberculosis The penalty for violation of the law is a fine of from $10 to $500

Personal—Dr Charles Van Kopper, Great Notch was seriously injured in a collison between automobile buses, November 12——Dr Jacob C. Price, Branchville, has been selected as director of the bureau of administration of the State Department of Health, Dr Millard Knowlton Trenton, chief of the division of publicity including the subdivision of child hygiene, and Dr A Clark Hunt, Metuchen, chief of the division of medical diagnosis, including contagious diseases——Dr Britton D Evans, Greystone Park, medical director of the Morris Plains State Hospital has been appointed chairman of the committee to prepare legislation for the better care of the insane of the state.——Dr Charles E. MacDonald, Salem, has returned after several months' service in a war hospital in Budapest, Hungary——Dr Arthur J Casselman, Camden, sailed for Europe, October 24 to become chief bacteriologist of the Women's American War Hospital, Paignton, North Devon, England.

NEW YORK

Personal—Dr William H Heath, Buffalo, has been appointed executive medical advisor and sanitarian to the king of Siam His duty will be to establish modern sanitary conditions in that country——Dr R Leighton Leak, Syracuse, has been appointed physician in charge of the Syracuse Psychopathic Hospital, succeeding Dr Hersey G Locke, resigned

Rabies—During the year ended November 1, dogs bit 3,107 persons in New York City, requiring these persons to take the Pasteur antirabic treatment It is said that the muzzling ordinance is ineffective, and that 354 of the dogs that bit were on the leash and 567 were muzzled In all instances in which the muzzled dog bit, the muzzle was of the strap variety

State Investigation of Anthrax Fatalities—The recent death of Siphia Rosen from anthrax attributed to infection from a fur collar has led to an investigation by the state Dr T C. Graham Rogers, director of the division of industrial hygiene of the state department of labor, is giving the matter his personal attention and proposes to make a thorough investigation of the method of curing and manufacturing cheap furs in this city Both Dr Rogers and Dr Alva H Doty have expressed the opinion that there need be no alarm felt that the disease would spread

Tuberculosis Hospitals—Plans are being made by the board of supervisors of Herkimer County for the County Tuberculosis Sanatorium for which an appropriation of $25000 was voted at the last election——At the election in Niagara County, November 2 the tuberculosis hospital referendum was carried by a safe plurality——The supervisors of Chautauqua County have accepted the gift of a hospital for tuberculosis to be erected on a site purchased by the trustees, under the will of Elizabeth N Newton, Fredonia, who left a bequest of $150,000 for that purpose.

The Infant Welfare Campaign of 1915—Official statistics with reference to infant mortality are now available for the first seven months of 1915 They demonstrate the success of the campaign against infant mortality that has been prosecuted with such vigor since the spring of 1914 The infant mortality rate from Jan 1 to Aug 1, 1913 was 111 per 1,000 living births, for the same period of 1914 it was 102 per 1000 and this year the rate has fallen to 98 per 1,000 Two exhibits were in constant use throughout the state and the newspapers have accorded the work generous support. By the aid of these instrumentalities the workers have been enabled to increase the number of infant welfare stations from thirty-two in twelve different localities in 1913 to seventy-four in forty-five cities and towns during the present year The statistics have demonstrated the utility of these stations in every locality in which they have been established Efforts have also been made to establish little mothers' leagues in the public and parochial schools and thus far about 12,000 children have been enrolled Sunday, June 20, was generally observed throughout the state as Child Welfare Day and it is hoped that this may become a permanent feature and be generally observed in succeeding years

New York City

Health Department Official Dies—Bayard Clark Fuller formerly chief inspector for the department of health, died November 10 Mr Fuller had been in the service of the department for twenty years

Harvey Society Lectures—The third lecture of the Harvey Society lecture series, delivered before the New York Academy of Medicine October 27 was by Dr Eugene DuBois, Cornell University, on 'The Respiration Calorimeter in Clinical Medicine'

Diagnostic Clinic for the Bronx.—The Department of Health has established a Wassermann diagnostic clinic at its Bronx office. Third Avenue and St Paul's Place Physicians who desire to avail themselves of the services thus offered are urged to refer their cases to this office.

Court Enforces Medical Treatment of Child.—The authority of the board of education to compel parents to send their children to school in good physical condition has been sustained by the children's court of Brooklyn, which ordered the parents of a pupil to have the boy's diseased tonsils removed

Personal—Dr Wesley M Baldwin has accepted the appointment of professor of anatomy at the Albany Medical College——Dr Charles V Morrill has been appointed instructor in anatomy and Dr Robert Chambers assistant in anatomy, to succeed Dr Baldwin at the Cornell University Medical College

Lectures for Health Board Employees—A course of lectures on the "Haunts and Habits of Microbes" will be given to the employees of the Health Department on alternate Saturday afternoons, beginning November 20, and continuing until May The lectures are under the direction of Dr William H Park, and will be given at the laboratory of Bellevue Hospital Medical College

Suit Against Rockefeller Institute Fails—The damage suit against Rockefeller Institute for $200,000, brought by two of the former employees of the institute, was dismissed in the United States district court, November 4 The plaintiffs in the case alleged that the doctors had persuaded them to submit to the injection of serum from which they had become infected with an incurable disease The court held that the facts were insufficient to constitute a cause of action

Homes for the Aged Investigated—During the past summer the Department of Health, through its division of inspection, made a survey of forty-six institutions devoted exclusively to the care of the aged, for the purpose of determining the adequacy and suitability of the provisions made for old people in the various homes throughout the city The report shows that in not a single instance was anything found concerning which serious complaint could justifiably be made The buildings were all found to be ample in size, and the ventilation, lighting, heating, plumbing and sewage satisfactory The buildings were all well equipped and the housekeeping invariably well done There were excellent accommodations for the sick There were a few minor suggestions made, among them that in several instances a more thorough screening against flies would add to the comfort of the inmates

Medical College Reorganizes Surgical Staff—Cornell University Medical College has recently reorganized its surgical service at Bellevue Hospital There is now one visiting surgeon in charge with continuous service, two visiting surgeons with continuous service limited to some special subdivision of general surgery, two associate visiting surgeons on a full-time salary basis with four assistants who will also be juniors to the outpatient department The organization now includes laboratories for surgical pathology and experimental surgery each under a full-time salaried man These laboratories are available to all members of the staff who have the privilege of working therein The entire staff has been appointed to positions on the department of surgery in the medical college All students take a portion of their ward work in this organization The essential changes from the system formerly in vogue consists in having one head continuous service, full-time salaried surgeons and laboratories under the jurisdiction of the surgical service The staff as at present constituted is as follows visiting surgeon in charge—Dr John A. Hartwell, assistant professor of surgery, visiting surgeons—Drs George Woolsey and John Rogers, professors of clinical surgery, associate surgeons—Drs Kenneth Bulkley and James N Worcester, instructors in clinical surgery, junior surgeon—Dr Fenwick Beekman, instructor in operative surgery, surgical pathologist—Benjamin M Vance, instructor in pathology, and assistant in experimental pathology—Dr Joseph W McMeans, assistant in surgery

OHIO

Youngstown Pulpits Filled by Physicians—November 28, through the efforts of the Mahoning County Medical Society, the pulpits of Youngstown were filled by physicians who delivered addresses on health and sanitation

Personal—Dr E Sheldrick, Cleveland, while motoring near Hagerstown, was seriously injured November 2, by the overturning of his automobile——Dr Elmer W Coe, Youngstown, is ill with smallpox——Dr W R Moore, Mt Pleasant, has been appointed assistant medical examiner on the State Industrial Commission——Dr William Scott, Loveland, underwent an operation, November 2

District Tuberculosis Hospital—At a meeting of the trustees of the District Tuberculosis Hospital held in Chillicothe, November 11, it was decided to erect an administration building to cost $35,000 The funds will be furnished by the counties in the district, each county paying a proportionate share on the basis of its tax duplicates, which will be turned over to the trustees by the first of the year

Hydrophobia—According to figures of State Board of Health, since January, 1915, the laboratory examined 189 brains of animals suspected of having rabies, and the Board of Health of Cincinnati examined twenty-four additional. In 115 of the state and fourteen of the Cincinnati examinations the disease was found, showing that the rabies is widespread in Ohio Five cases in human beings were reported during the year, all of which were fatal

Hospital News—The physicians of Bellaire and trustees of the City Hospital held a conference, November 12, on the question of equipment. An offer has been made by a friend of the institution to donate $3,000 to the hospital fund on condition that the trustees raise an additional $10,000 Of this amount, $6,000 had already been subscribed at the time of the meeting——A Roentgen-ray machine to cost about $3,000 has been installed in the East Liverpool City Hospital Dr Joseph W Chetwynd has been appointed roentgenologist to the institution

Cincinnati

Work on School to Begin in April.—Dr Christian R Holmes, dean of the medical department of the University of Cincinnati, announces that it is expected that the work of construction on the new medical school will begin in April next The site for the college building is now being graded and a revision of the building plans is being made.

Personal—Drs Guy G Giffen and Giles A. DeCoursey have been appointed junior surgeons on the genito-urinary staff of the Cincinnati Hospital——Dr Max W Shaweker has succeeded Dr Philip Coulter as assistant receiving surgeon of the Cincinnati General Hospital Dr Coulter has been appointed to a position in the United States Public Health Service and will take part in the campaign against trachoma in Virginia——Dr Erie A. Fennell has resigned as resident physician of the City Infirmary and the two refuge farms

Warning to Physicians—The *Weekly Bulletin* of the Cincinnati Academy of Medicine warns local practitioners against a young German who has been visiting the members of the profession in Cincinnati who have German names, claiming that he bears the same name and obtaining small sums of money from them on the pretense that he is an interned sailor and wishes to enlist in the United States Navy

PENNSYLVANIA

Personal—Dr Frank V McConkey York, who underwent operation for appendicitis, recently, is reported to be convalescent——Dr Albert A Lindabury, Scranton, is reported to be seriously ill and is under treatment at the Scranton State Hospital——Dr James R Montgomery, Bloomsburg, while making a professional call in the country, suffered a fracture of the arm by the overturning of his automobile

Philadelphia

Rush Society Lecture—The twelfth Rush Society lecture will be delivered at the College of Physicians, November 29, by Dr Daniel J McCarthy of the University of Pennsylvania Medical School, on "Medical and Surgical Problems Incident to War"

Women Physicians to Lecture—Drs Clara Marshall and Martha Tracy and Miss Mary Ingham have been appointed a committee to arrange for a course in preventive medicine and hygiene to be given to mothers and women generally by the Women's Medical College of Pennsylvania

Civil Service Examinations—Notice is given by the Philadelphia Civil Service Commission of the following examinations December 15, chief of the Division of Vital Statistics with a salary of $1,750 under the Health and Charities Department of the Bureau of Health, January 18, resident physician, open to residents of Pennsylvania with a salary of $600 to $900 under the Department of Health and Charities under the Bureau of Health and Charities, January 19, assistant bacteriologist, first assistant bacteriologist and fourth assistant bacteriologist with respective salaries of $1,400 to $1 500, $2,000 and $1,000, under the Department of Health and Charities of the Bureau of Health, January 13, assistant, pathologic and bacteriologic laboratory, with a salary of $720 under the Department of Health and Charities of the Bureau of Charities, December 10, assistant antitoxin laboratory, men and women, with a salary of $1 000, under the Department of Health and Charities of the Bureau of Health, December 27, assistant bacteriologist with a salary of $1,200, under the Department of Public Works of the Water Bureau Applications for these positions must be executed and filed with the commission not later than the third day prior to and exclusive of the day of the examination

SOUTH DAKOTA

Off for the War.—Dr Ole W Rood, Watertown, has started for Paris, where he will enter a French military hospital——Dr Alexander O Fasser, Bellefourche, has started for France, where he will serve in an American hospital in the war zone

Removal of a Smallpox Patient.—The supreme court of South Dakota has decided in the case of Gould appellant, vs Dr William F Keller, Sioux Falls officer of the board of health in Minnehaha County, that a health officer or physician cannot be compelled to remove a smallpox patient, or other such dangerous patient, from a residence when there is no pest house or place provided by the city for the detention of such patients In Sioux Falls a patient had smallpox in a private house and the owner, Gould, tried to compel the board of health to remove the patient As the city had no pest house, there was nothing to do but leave the patient in the house where the illness occurred The trial court refused under the circumstances to issue a writ to remove the patient.

CANADA

Hospital News.—Upper Lodge the beautiful royal domain at Bushey Park, Surrey, has been offered by the king to the Canadian Red Cross The offer has been accepted by Surg.-Gen Carleton Jones, on behalf of the Canadian Army Medical Service It will be furnished and equipped as a convalescent home under Col Charles A. Hodgetts It will be known as the Princess Mary's Canadian Red Cross Convalescent Home and will be equipped with 300 beds——The Carleton County Protestant General Hospital, Ottawa, Ont, held its annual general meeting October 14 The year has been successful and the finance committee was enabled to reduce the overdraft by $2 500 The number of patients admited during the year was 2 743 including a number of soldiers——The new civic hospital for infectious diseases in Quebec was opened September 30 The hospital will be under the supervision of the sisters of the gray nunnery——Stratford Ont. will vote on a bylaw January 1 to provide for $7 500 to wipe out the debt of their city hospital——The old Bishop Strachan School on College Street, Toronto, will soon be in operation as the first convalescent home for returned wounded soldiers When completed it will accommodate 200——The public institutions, including hospitals for the insane and others in Ontario have contributed a large proportion of the equipment for the new Ontario Military Hospital being established in Orpington Kent, England

Personal.—Lieut James W Richardson M D Calgary Alta. operating specialist in the Imperial Army Medical Corps is in Canada on furlough after a year's service——Lieut. Ramsay D Rakin, Stratford Ont is medical officer to the Perth County, Ontario Battalion Staff——Dr Daniel Phelan surgeon to the Kingston Ont, penitentiary for nineteen years has retired——Dr Benjamin J McConnell, Winnipeg Man, has been appointed coroner for that city——Dr Weston W Milburn Macleod Alta, has been appointed surgeon for the Blood Reserve in succession to the late Dr Oliver C Edwards——Dr John Cameron, Middlesex Hospital, London Eng., has been appointed to the chair of anatomy in Dalhousie University, Halifax, N S, in succession to the late Dr Andrew W H Lindsay——Dr Oliver R. Mabee Toronto has been appointed acting professor of pathology in the University of Toronto pending the return of Prof John J Mackenzie Toronto, whose leave of absence has been extended——Maj George H Burnham, Toronto has been mentioned for distinguished conduct in the field——Maj R. Percy Wright Montreal has been appointed officer in command of No 1 Field Ambulance in succession to Lieut.-Col Arthur E Ross Kingston Ont who is now assistant director of medical services of the first Canadian division——Dr Henry H Planche A M C, Cookshire, Que., is on active service at the Dardanelles——Dr Howard Hepburn one-time medical superintendent of the General Hospital Montreal is serving on the staff of one of the British field hospitals——Dr Harold Tait R.A.M C., St. John's, N F is on the staff of a base hospital of 3 000 beds in Malta——Maj L. Handford McKee, Montreal has been invalided to England from the Dardanelles——Capt William J Enright, Twenty-Second Battalion, of Port Daniel East, Que, is reported wounded

Ontario Medical Commission.—The past week has been an important one before the Ontario Medical Commission The Academy of Medicine Toronto, presented the case for the medical practitioners from various standpoints, the president of the academy, Dr William H B Aikins, being in charge Dr Arthur Jukes Johnson, chief coroner for Toronto, presented the medicolegal aspect of medical practice and cited concrete cases in support of his views Dr Albert A Macdonald Toronto spoke for the life insurance companies and also cited cases supporting his claim that the public interested in their policies should be protected by the law Dr D J Gibbs Wishart said that specialists after graduation should take from two to five years special training before becoming specialists in any line Dr Goldwin W Howland, specialist in nervous diseases told of the many cases which came to him from the osteopaths and chiropractors after they had failed to relieve the "kinks in the spine" and he had to pass them on to the Home for Incurables Postmortem examinations showed that the "kinks" had been cancer of the brain and various other nervous diseases Dr Clarence L. Starr made out a strong case for the orthopedic surgeons Dr Charles R Dickson stated that the Roentgen ray in the hands of an unqualified man was as dangerous as strychnin Dr Charles J C O Hastings, M O H, Toronto, and Dr John W S McCullough, chief health officer for Ontario, made strong attacks against licensing any one to practice medicine who had not passed the prescribed examinations Dr McCullough presented the following memoranda from the Ontario Board of Health (1) The standard of medical education should be maintained and with the advance of scientific knowledge increased (2) Those entering on the study of medicine should have a good preliminary education equal at least to honor matriculation (3) The course of study should embrace at least five years of nine months each (4) Since it is admitted that the fundamental principles of medicine embrace a thorough knowledge of anatomy, physiology biology, physiologic chemistry, bacteriology, pathology, diagnosis, as well as clinical experience, these subjects must be included in the course of study, no matter what form of treatment any physician desires to pursue. (5) No unqualified man or woman should be allowed to practice medicine in any shape or form The nursing profession also placed its views before the commission The suggestions included the establishing of a chair of nursing in the University of Toronto, and the appointment by the provincial government of a council for the education of nurses to consist of seven members two to be medical men and the remaining five to be nurses It was also proposed that an inspector of nurse training be appointed, and that a uniform examination be established twice a year with nurses as examiners The fact was presented to the commissioner that there are no schools or colleges in Canada for osteopaths or chiropractors, and that such practitioners are not licensed in England.

GENERAL

Dr Carter Seriously Ill.—It was reported from Washington November 18 that Asst. Surg.-Gen Henry R. Carter, U S P H S, who recently went to Porto Rico to study dengue, is critically ill with that disease

Eye, Ear and Throat Specialists Will Meet.—The twenty-first annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Memphis, Tenn, December 5 to 7, under the presidency of Dr John E. Brown, Columbus Ohio

Southern Medical Women Elect Officers.—At the third annual meeting of the Association of Southern Medical Women at Dallas November 10 the following officers were elected president, Dr Mary E. Lapham Highlands, N C., vice presidents Drs Mary A. Parsons and Mary L. Strobel Washington, D C, and secretary-treasurer, Dr L. Rosa H Gant Spartanburg, S C.

Distributing Points for Red Cross Supplies.—At a meeting of the American National Red Cross in New York City recently, it was announced that Boston, Washington New Orleans, Jeffersonville Ind Chicago St. Louis Omaha, San Antonio, Texas El Paso Texas Seattle and San Francisco would be the distributing points for Red Cross supplies and mobilization centers for nurses and physicians At present 7 000 Red Cross nurses are enrolled in the United States

First Aid Symposium.—At the regular meeting of the Baltimore City Medical Society, November 19 a symposium on first aid was held, in which the subject was discussed from the standpoint of the Army by Col Louis A LaGarde, M C , from the standpoint of the Navy by Surg Richmond C Holcomb, from that of the Public Health Service by Asst Surg-Gen William Colby Rucker, and from the standpoint of the American National Red Cross by Maj Robert U Patterson, M C, U S Army

Baby Week—The health officials of thirty-nine states have already pledged their cooperation in the observance of a nation-wide "Baby Week," March 4 to 11, 1916, according to an announcement of the federal children's bureau There has been much interest manifested and many inquiries to the bureau regarding the coming Baby Week The bureau has prepared a circular, which will be of great assistance to communities proposing to conduct local Baby Week campaigns

Railway Surgeons Meet—At the annual meeting of the Southern States Association of Railway Surgeons held in Dallas, November 8, under the presidency of Dr Thomas H Hancock, Atlanta, Ga, Dr Southgate Leigh Norfolk, Va, was elected president, Dr Robert W Knox, Houston, Texas, vice president, and Dr Ambrose McCoy, Jackson, Tenn secretary A day was appointed to work with Dr Joseph C Bloodgood, Baltimore, in aiding the propaganda of the first aid conference.

Buy and Sell Christmas Seals—Red Cross Christmas Seals, which were first put on sale in 1907 in the state of Delaware, are now sold throughout the United States The educational influence of the Christmas seals campaign has been responsible for much of the present widespread interest in the campaign against tuberculosis The worker in the Christmas seals campaign meets with an established demand for Christmas seals The campaigns in various states have different forms The National Association for the Study and Prevention of Tuberculosis, in cooperation with the American Red Cross, will again this year award banners for the largest sales of Christmas seals per capita for population It is hoped that new records for total sales and interest in this worthy cause will be established this year Over a half million dollars was raised last year Information and literature regarding the campaign may be obtained by addressing the National Association for the Study and Prevention of Tuberculosis, 105 East Twenty-Second Street, New York City

Bequests and Donations—The following bequests and donations have recently been announced

Mercy Hospital, Cadillac, Mich , $10,000, and $20,000 to be used by the municipality in the betterment of health conditions, the income to be used for paying the salary of a visiting nurse, by the will of Mrs Delos F Diggins

Jewish Hospital, Kansas City, for the erection of a memorial building in honor of their mother, a donation of $15,000 from Henry, Samuel, Robert, Isadore and Charles Straus

Women's Hospital in the State of New York and Presbyterian Hospital, New York City, each $100,000, Manhattan Eye and Ear Hospital, and New York Institute for the Deaf and Dumb, each $50,000, St Luke's Hospital, $25,000, by the will of Mrs Maria DeWitt Jesup

Methodist Episcopal Hospital, New York, $5 000 and Presbyterian Hospital, $1,000, by the will of George Clinton Batcheller

Long Island College Hospital, Brooklyn, $75,000, House of St Giles the Cripple, Brooklyn, $30,000, and Hudson City Hospital, Hudson, New York, $25,000, by the will of Mrs Katherine S Leavitt

National Medical Day—The National Association for the Study and Prevention of Tuberculosis makes an urgent plea that every man and woman in the United States of adult age join in the movement for annual or other periodic medical examination of themselves During the week from December 6 to 12, known as tuberculosis week, one day, December 8, is asked to be observed as a national medical examination day The association has issued a circular describing in detail how the advantages of medical examination may be obtained and details certain physical impairments This circular is sent on request from the office of the association, 105 East Twenty-Second Street, New York City

Health by Pictures—The United States Public Health Service has opened a new campaign to teach the people of the country to combat disease It has established a "stereopticon loan library," the first of its kind This library is sending out daily, at the request of sanitarians, educators and other persons interested in the promulgation of personal and public sanitation, slides portraying the different phases of the subjects The surgeon-general's office has prepared catalogs containing photographs of the slides and descriptive matter thereon These books are being sent out to persons and organizations interested, so that request may be made for the particular slides desired for lectures in the various communities A wide range of subjects is covered by the stereopticon loan library It portrays sanitary conditions in Alaska and covers the whole field of yellow fever There are special collections on the diseases of children, the hookworm, leprosy, malaria, milk production, mouth hygiene, pellagra, plague, rural schools, smallpox, tropical diseases tuberculosis and typhoid fever There are duplicate sets of these slides, so that the service is able to supply more than one call at the same time, should any of them prove more popular than others The new library rapidly is growing in demand, and individuals as well as state and local health authorities and schools throughout the country are sending in their requests for the pictures This new scheme performs a twofold function It provides a logical system of public health education, while at the same time furnishing entertainment for the people. It also enables the service to spread the doctrine of personal hygiene and public sanitation thus over a large field, and possibly reach many persons who could not be interested in the reading and study of dry technical pamphlets on these important subjects

WAR NOTES

American Physicians and Sanitarians Decorated—Crown Prince Alexander of Serbia decorated forty-three American physicians and sanitary engineers for their services in controlling typhus fever

Obligation of the Red Cross to the Armed Forces of the United States—The American Red Cross has issued a circular of information regarding the obligation of the American Red Cross to the armed forces of the United States These obligations are divided into three classes funds, personnel and supplies The personnel is divided into three classes including those of the trained personnel who are willing to serve wherever needed, those willing to serve in their home country only, and those willing to serve at their places of residence only From the first class only are taken the personnel for field columns, hospital columns, supply columns and information bureau sections

More Hospital Supplies Shipped—The American Red Cross shipped on the steamer *Rochambeau*, from New York, November 6, 12,130 pounds of relief contributions for the sick wounded and destitute in France, consigned to the American Relief Clearing House, Paris, and also 7,000 pounds of supplies for Armenia, 15,000 pounds of hospital supplies for German prisoners in Russia and 4,875 pounds for the Russian Red Cross This last consignment was sent in care of the Russian minister for foreign affairs, Petrograd——Nearly 10,000 cases of medicines and medical and surgical supplies for use in military hospitals in England and on the British war front, were shipped on the steamer *Colonian*, from Boston, November 6

Third Harvard Surgical Unit Sails—The Third Harvard Surgical Unit sailed from New York for Falmouth, England, on the steamer *Noordam*, November 17 The unit is in charge of Dr David Cheever, Boston, and consists of thirty-six nurses and the following physicians Drs John L. Bremer, Boston, Bronson Crothers, Cambridge, Mass , Abram L Van Meter, Boston, John F Dillon, San Francisco, R H McNair, Springfield, Mass , Frank A Smith, R S Catherton Armond A Halliday, Toronto, Edward B Towne, Boston, William D B Jack, Vancouver, B C., George Benet, Boston, Eben W Fiske, Boston, Frank Abbott, Toronto, Lawrence R. Hill, Concord, N H , Winford O Wilder, Pittsfield Mass , A Gale Straw, Manchester, N H , E O Thomas, John C Phillips, Wenham, Mass , George Osgood, Cohasset, Mass , George M Watson, Manchester, N H , and Macy Brooks, Philadelphia Sir Wilfred T Grenfell of Labrador expects to associate himself with the unit and will sail early in December for England

LONDON LETTER

London, Nov 5, 1915

The War

THE POSITION OF MEDICAL STUDENTS

The position of medical students is the subject of a good deal of discussion On the one hand the government is appealing to every physically fit man of military age to join the combatant forces of the greatest voluntary army the world has ever seen On the other hand the shortage of physicians, which has frequently been pointed out in The Journal, will be increased if medical students are withdrawn from their studies The authorities have decided that students in the fourth and fifth years of study should complete their course as rapidly as possible but that students in the first, second and third year should join the army The effect of recruiting is shown by the statistics of ten leading medical schools, in which during the first year of the war, the number of students was 1 891, as compared with the normal number of 2 562. The number of medical students who have entered Cambridge University this year is forty-one as compared with 116 in the year 1913 At St Thomas's Hospital London, the number is 45 per cent below the average. The director general of the Army Medical Corps has asked for an additional 2 000 physicians before Christmas for war service The casualty lists of one week show the names of fifteen physicians and the obituary lists of physicians killed usually three or four, Sir D Macalister in his presidential address at the opening of the present session of the General Medical Council, said that within the next few months every qualified man of suitable age who was fit for the work of an officer in the medical corps would be needed The profession looked to the public to lighten the sacrifices and burdens which all must endure in these days both by loyalty to the absent and by consideration for those who took their place The proportion of country physicians who had been set free for military service was higher than that from the large centers of population The town physician owing to the somewhat loose attachment of his patients to him feared that they might be alienated if he went into the army The medical war committees were endeavoring to promote equitable agreements between practitioners who remained on civil duty and their colleagues on active service, and he thought the profession had given abundant proofs that it would not be wanting in duty or in self-denial From the British dominions and from other countries over 240 physicians had been registered this year and when certain reciprocity arrangements had been completed, the number from Canada would be considerably increased Although the War Office authorities recognized that the withdrawal from professional instruction of large numbers of medical students of the first years, would have a serious effect on the future they had deemed it inadvisable to discourage junior students who offered themselves for combatant service The result of medical students accepting commissions and enlisting was that the prospective shortage of 250 qualified practitioners per annum which he had mentioned on a former occasion as probable during the coming years would almost certainly be exceeded There was one direction in which it appeared likely some economy of medical students might be effected The minor vessels of the fleets carried a surgical probationer," and for this work medical students who had completed their physiologic and anatomic studies and had been instructed in surgical dressing are preferred He was authorized to make it known that any probationer who after say, six months' service, desired to present himself for a professional examination or to resume his studies would be granted leave of absence or be demobilized, and a less senior student be appointed in his place By such rotation of service, a succession of students might continue to be employed in war work and yet the qualification of none would be unduly delayed

THE ROYAL COLLEGE OF SURGEONS

The manner in which the war is permeating our whole national life is shown by the recent report of the College of Surgeons Six members of the staff have enlisted in the army The physiologic curator of the museum is serving in connection with the voluntary hospital under the French Red Cross It is proposed to transfer temporarily a pathologic attendant in the museum to the Army Medical Service for duties in connection with the transport to this country of pathologic specimens from military sources In several cases candidates are allowed to present themselves somewhat earlier than would otherwise be allowed. Moreover, time spent as assistant on active service in a naval vessel or in a naval or military hospital, or any hospital utilized by the naval or military authorities, not exceeding six months, may be allowed to count for the equivalent period of medical and surgical hospital practice and for three months each of medical clinical clerkship and surgical dressership, provided that a satisfactory certificate is produced from the principal medical officer under whom the assistant serves

PARIS LETTER

Paris, Oct. 28, 1915

The War

MEASURES FOR THE BETTER UTILIZATION OF MEDICAL ABILITY

Because of the constant increase of the staff of the medical service and the desirability of having exact information available with regard to the officers of the service, the assistant secretary of the military medical service has ordered a report to be drawn up for each officer and each civilian physician employed in a military establishment, to permit the best utilization of each man's abilities Each individual report is to show apart from the physician's military titles, the following data university titles (professor, agrege professor in a medical school, prosector, anatomic assistant, head of a laboratory etc), hospital physician (physician or surgeon of the hospitals head of clinic, surgical assistant hospital intern) specialty (mention particulars, such as directing a surgical clinic, a bacteriologic or roentgenographic laboratory, etc)

THE SANITARY PROTECTION OF THE TROOPS IN THE FIELD

The novel conditions of trench warfare the use of previously *unfamiliar* chemical weapons, such as asphyxiating or toxic gases and the necessity of protecting our men against poisoned drinking water—all these considerations have necessitated the organization of a new protective service. The medical service has just organized about 200 toxicologic laboratories to examine foodstuffs and drinking waters, to study the ways and means for combating asphyxiating gases and other dangerous chemical products, and to assist in solving all problems of disinfection The laboratory workers, who are selected after a rigid examination, are in the main pharmacists, court experts doctors or licentiates in science or holders of various teaching positions in our colleges and schools The authorities of the medical service will summon them to Val-de-Grace part at a time, to receive instructions with regard to analytic methods to be used and measures to be employed in case the enemy should make use of new deleterious gases Each laboratory is supplied with material and indispensable chemical reagents so that it can answer promptly the most urgent question Thus the drinking waters for troops arriving at new quarters will be analyzed, rejected or purified foodstuffs will be carefully examined, gases or deleterious products will be identified so that they may be combated with chances of success, and the disinfection of trenches, buildings, clothing etc, performed under the oversight of a competent specialist

ARTERIAL INTUBATION AS A SUBSTITUTE FOR IMMEDIATE LIGATURE IN WOUNDS OF LARGE VESSELS

At a recent session of the Academie de *médecine* D Tuffier, agrege professor at the Faculté de médecine de Paris and surgeon of the hospitals, gave an interesting address on this subject. Ligaturing large arteries, when these are wounded immediately suppresses the circulation in the whole limb or organ tributary to the wounded vessel This sudden suppression may cause gangrene of the limb and necessitate amputation or produce serious functional disturbances To avoid such results Tuffier has devised a method that he calls 'arterial intubation ' It consists in reuniting the two cut ends of the vessel by a special tube which permits the circulation to continue for some days Suppression of the circulation being progressive the troubles mentioned above are avoided The difficulty consists in avoiding the coagulation of the blood in the tube For this purpose Tuffier makes use of instruments which have been employed in transfusion namely, silver tubes with extremely thin walls which have been placed in boiling paraffin This paraffin coating permits the blood to circulate in the tube without coagulating or at any rate makes the coagulation extremely slow

As an instance in favor of the new method, the applications of which in military surgery may become very numerous, Tuffier reports the case of a patient with a transverse wound of the elbow, cut by machinery, the forearm and hand were cold and livid, without trace of circulation, on the side of the wound Seven and a half hours after the wound, a relatively long time, the circulation was reestablished by means of a 2-mm paraffined tube uniting the brachial artery to the radial artery of the forearm The circulation was immediately reestablished and the radial pulse was perceived for ten hours, the forearm and the hand became warm Three days later the tube was removed There was only a partial success, owing to the small caliber of the tube employed and the relatively considerable time which had elapsed between the injury and the intubation Still only a part of the hand underwent sloughing It is, in short, a method which will render valuable service in the conservation of limbs after serious traumatism of the arteries

PATHOLOGIC AND SIMULATED ALBUMINURIA

At a recent session of the Societé de biologie, Drs A C Hollande and J Gate presented a study of one of the most interesting questions for military physicians, that of the simulation of albuminuria by the introduction into the urine of the subject under examination, by means of an intravesical injection, of a certain quantity of egg albumin From their investigations it appears that the presence of egg albumin in human urine may be ascertained by Maurel's fluid (250 c c of 33 per cent sodium hydroxid, 50 c c of 3 per cent copper sulphate, 700 c c of pure acetic acid) and precipitins Important indications are also furnished by the macroscopic and microscopic examination of recently voided urine The rapid disappearance (within from two to four days) of albumin from the urine of the subject under examination, or disappearance after the lavage of the bladder confirms the results of chemical procedures

PLANTS SUITABLE FOR USE IN THE SANITATION OF BATTLEFIELDS

In a previous letter (The Journal, Aug 28, 1915, p 813) I mentioned various plants which are suitable for the sanitation of battlefields because they have in high degree the faculty of absorbing rapidly decomposing organic matter MM Vilmorin and Mottet have just called attention, in *La Nature*, to various gramineous and leguminous forage plants, annual and perennial, that might profitably be used in the zones of battle for purifying the land and furnishing harvests of fodder, a most valuable resource in view of the impoverishment of the country with respect to cattle and the need of increasing our herds as rapidly as possible Among the annual gramineous plants, the authors mention various species of maize, of millet, of sorghum, among the perennial gramineous plants, the tall oat grass (*Arrhenaterum elatius*), which is suitable for all kinds of soils, and a number of different species which are suitable for soils of various characters, among the annual leguminous plants, the red clover, the velvet vetch and other vetches, the kidney bean, and some varieties of peas, among perennial leguminous plants, alfalfas, sainfoin, etc. These perennial leguminous plants, because of their very long roots, are most valuable for the purification of battlefields Annual leguminous plants, such as peas, winter vetches and red clover, sown at the end of summer or in autumn, furnish an early forage crop in the spring, and leave the ground free for the immediate planting of another crop of some such plant as maize or Jerusalem artichoke Thus the absorption of decomposing organic matter is considerably increased while the land is producing crops all the year and yielding a double harvest thereby serving both public salubrity and the interest of agriculture

Death of Prof Albert Malherbe

Dr Albert Malherbe, formerly professor of pathologic anatomy and honorary director of the Ecole de medecine de Nantes, has just died in his seventieth year He was the author of interesting works on sarcoma Professor Malherbe had been in the service of the school for forty years He was a corresponding member of the Academie de medecine

Foundation of New Chairs in the Faculté de médecine de Paris

On the recommendation of the minister of public instruction, there were created by a decree dated Oct 7, 1915, a chair of topographic anatomy and a chair of bacteriology in the Faculte de medecine of the University of Paris

Marriages

Joseph Hall Whiteley, M D, Bonaparte, Iowa, to Miss Nellie Elizabeth Linder of Libertyville, Iowa, at Des Moines, Iowa, October 27

George Osgood, M D, Cohasset, Mass, to Miss Barbara Kendall Bolles of Boston, at her summer home in Cohasset, November 7

Lee Roy McBurney, M D, Belt, Mont., to Miss Birdie Josephine Charleson of Chicago, at Great Falls, Mont October 2

John Martin Earnhardt, M D, Mount Pleasant, N C, to Miss Daisy Myrtle Bost of Philadelphia, November 10

Lynn Brian Vaughan, M D, Hurley, S D, to Miss Viola Constancia Fraser of Downers Grove, Ill, November 16

Warren Deweese Cox, M D, Youngstown, Ohio, to Miss Alma Shollenberger of Montgomery, Pa, November 3

Charles Wallace Armstrong, M D, Troy, N C., to Miss Mabel Harris of Roxboro, N C, November 9

James Brown Biggs, M D, Bowling Green, Mo, to Miss Edna Major of Sedalia, Mo, November 10

Erwin Hare Mudge M D, to Miss Florence Minton, both of Westfield, N Y, November 3

John Woodly Wallace, M D, to Miss Helen Archey, both of Concord, N C, November 12

John Henry O'Shea, M D, to Miss June Twohy, both of Spokane, Wash, November 24

John Whiting Hargis, M D, to Miss Edythe Grant, both of Pensacola, Fla, October 30

Silvies S Fuller M D, to Miss Maud Wilson, both of Idaho Falls, Ida, October 30

Dorris May Presson, M D, to Mr Arthur H Kraus, both of Augusta, Me, October 27

Deaths

George E Ranney, M D University of Michigan, Ann Arbor, 1863, aged 76, a member from 1866 to 1886, secretary and in 1891 president of the Michigan State Medical Society, president of the Michigan Central Medical Society in 1873, of Lansing, Mich , division surgeon of the Chicago and Grand Trunk Railroad, surgeon of the Second Michigan Volunteer Cavalry during the Civil War, and a prisoner in Libby Prison, Richmond, Va , who had conferred on him two Congressional medals of honor for gallantry in action, formerly state inspector of communicable diseases, organizer of the State Board of Health and of the Health Department of Lansing, died in the Michigan Karlsbad Sanatorium, Lansing, November 11, from cerebral hemorrhage

William S Holliday, M D Louisville (Ky) Medical College, 1874, aged 65, of Monmouth, Ill , a member of the Illinois State Medical Society and for more than forty years a practitioner of Warren County, Ill , county physician of Warren County from 1876 to 1882, and coroner from 1881 to 1883, for more than twenty-five years a member of the city council of Monmouth, died in the Monmouth Hospital, November 6, from pulmonary embolism, two weeks after an operation for appendicitis in which a gangrenous appendix was found

J B Gregg Custis, M D New York Homeopathic Medical College, New York City, 1878, aged 60, president of the board of medical supervisors of the District of Columbia and formerly president of the American Institute of Homeopathy, a director of the National Capitol Bank Washington D C, died at his summer home on Grindstone Island Thousand Islands, N Y, November 2, from hemorrhage of the stomach

James Taylor Jones, M D Washington University Baltimore, 1870, aged 59, a member of the Tennessee Medical Association, a Confederate veteran, formerly president of the West Tennessee Medical and Surgical Association and one of the best-known practitioners of that part of the state, died at his home in Jackson, Tenn, November 5, from pleuropneumonia

Horatio L Foster, M D New York Homeopathic Medical College, New York City, 1881, aged 58, a Fellow of the American Medical Association, formerly major of Red

City Mich , local surgeon of the Grand Rapids and Indiana Railroad, and surgeon to the Reed City Sanitarium, died suddenly, November 7, in his car near Orono, Mich

Arthur Pollard Mulligan, M D Bellevue Hospital Medical College, 1893, aged 55, of Salida, Calif , a member of the Medical Society of the State of California, formerly surgeon for the Southern Pacific System, who was thrown from his buggy in a runaway accident on his ranch near Modesto Calif , died in a hospital in Modesto, November 5

Howard Johnston Lee, M D University of Wooster, Cleveland, 1876, aged 64, a Fellow of the American Medical Association, for many years a practitioner of Cleveland, but since 1914 a resident of St Johnsbury, East, Vt., a member of the staff of Charity Hospital, Cleveland, died at his home in St. Johnsbury, East, Vt., November 5

Edgar Miller, M D Ensworth Medical College, St Joseph, Mo 1905, aged 31, a patient in State Hospital No 2 St Joseph Mo , formerly a practitioner of Mound City, Mo , was struck by a Burlington passenger train near Platte River, November 3, and died in a hospital in St Joseph from his injuries on the next day

Joseph Albright, M D Trinity Medical College Toronto, 1873, aged 78, a member of the staff of Butterworth Hospital, Grand Rapids, Mich , for more than forty years a practitioner of Grand Rapids and formerly an alderman and a member of the board of education, died at his home in Grand Rapids November 8

Norton Jerome Sands, M D College of Physicians and Surgeons in the City of New York, 1868, aged 70, a Fellow of the American Medical Association, of Port Chester, N Y , a veteran of the Civil War, a specialist on diseases of the eye, twice president of the village of Port Chester, died at his home, November 14

Charles A. Church M D New York Homeopathic Medical College New York City, 1871, aged 76, at one time president of the New Jersey Medical Club a member of the staff of the Passaic General Hospital, and chief surgeon of St. Mary's Hospital, Passaic, N J , died at his home in Passaic, November 12

John F Richards, M D College of Physicians and Surgeons San Francisco 1906, of San Francisco, while on a hunting expedition near Bear Falls Contra Costa County, Calif, November 7 was accidentally shot by a companion, and died while being taken to the Roosevelt Hospital, Berkeley, Calif

Charles A Hollingsworth, M D University of Maryland Baltimore 1881, aged 58, a member of the Medical and Chirurgical Faculty of Maryland, from 1881 to 1912 a practitioner and druggist of Belair Md and since that time postmaster of the city, died at his home, November 10, from nephritis

Ralph B McCleary M D Hahnemann Medical College, Chicago 1878, aged 82, for nearly half a century a practioner of Monmouth, Ill a veteran of the Civil War, coroner of Warren County from 1869 to 1880, died at the home of his daughter, in Monmouth, November 12, from senile debility

John B Alexander, M D Cincinnati College of Medicine and Surgery 1875 aged 63 of McPherson Kan , formerly a member of the Kentucky State Board of Health and president of the Kansas Academy of Medicine, died in the hospital in Dodge City, Kan, November 5, from disease of the kidney

William Francis Knox, M D University of Pennsylvania Philadelphia 1854, aged 84, a Fellow of the American Medical Association, one of the founders and formerly president of the Allegheny County (Pa) Medical Society, died at his home in McKeesport, Pa, November 12, from pneumonia

Martin Marmaduke Burchfield, M D Chattanooga (Tenn) Medical College 1908, aged 31, physician for a coal company at Whiteside, Tenn died in a hospital in Chattanooga November 13 from injuries received several weeks before when his automobile took fire near Hooker Station

Sherman Miller M D St Louis College of Physicians and Surgeons 1893 aged 49 a member of the Missouri State Medical Association, of Mayesburg, Mo while returning from Clinton Mo in his automobile, was drowned in a ditch by the overturning of his car

George M Burdette, M D Medical College of Georgia, Augusta 1861, aged 78, a Fellow of the American Medical Association and a well-known practitioner of Lenoir City, Tenn , died at his home in that place, November 4, from cerebral hemorrhage.

Frank J Huizenga, M D Rush Medical College, 1895, aged 42, of Rock Valley, Iowa, formerly coroner of Sioux County, Iowa, died at his hospital in Rock Valley, November 9, from injuries received in an automobile accident the week before.

James N Coons, M D College of Physicians and Surgeons, Keokuk, Iowa, 1857, Washington University, St Louis, 1868, aged 86, a retired practitioner of Marion County, Mo , died at his home in Palmyra, Mo , November 9, from heart disease.

William P Powell, M D Tulane University, New Orleans, 1869, aged 79, surgeon in the Confederate service during the Civil War and for many years a practitioner and druggist of Willis, Texas, died at his home in that city, November 6

Nehemiah Davis, M D Jefferson Medical College, 1886, Ph G, Philadelphia College of Pharmacy, 1878, a practitioner of Camden, N J , and in charge of the Camden Dispensary, died at his home in Camden, October 11

August W Duvall, M D Jefferson Medical College, 1877, aged 75, a practitioner of South Philadelphia, was taken ill with uremia while on the street, November 13, and died in the Hahnemann Hospital a few hours later

Francis C Kienzle, M D Northwestern University Medical School, Chicago, 1909, aged 39, a Fellow of the American Medical Association, died in his apartment in Chicago, November 15, from paratonsillar abscess

Lawrence S Ball, M D American Medical College, Eclectic, Cincinnati, 1855, aged 86, for sixty-five years a practitioner of medicine and druggist of Prairieton, Ind , a veteran of the Civil War, died at his home, November 1

David A. Amoss, M D Homeopathic Hospital College, Cleveland, 1880, aged 58, of Cobb, Ky , died in the Rockefeller Institute, New York City, November 3, after an operation for the removal of a tumor of the throat

Harry Daniel Reutter, M D Jefferson Medical College, 1884, aged 54 formerly a member of the Medical Society of the State of Pennsylvania, died at his home in Duncannon, Pa , October 30, from cerebral hemorrhage.

Joseph Shields Howe (license, Pennsylvania 1882), aged 78, a practitioner of Industry and Rochester, Pa , for forty-five years and a veteran of the Civil War, died at the home of his daughter in Los Angeles, October 28

Alexander C Freeman (license, Indiana 1890), aged 81, for more than forty years a practitioner of Kokomo, Ind , was struck by a passenger train near his home, November 1, and died from his injuries two hours later

Buehler Shoup Boyer, M D University of Maryland Baltimore, 1911, aged 30, medical examiner for the Baltimore and Ohio System at Parkersburg W Va , died in that place, August 8 from subacute nephritis

John F Brendel, M D Physio-Medical College of Indiana, Indianapolis, 1892, aged 62, formerly a Fellow of the American Medical Association, died at his home in Zionsville, Ind , November 5, from arteriosclerosis

Samuel L Nash, M D University of Michigan Ann Arbor, 1863, University of Victoria College, Coburg Ont., 1865, aged 83, died at his home in Bath, Ont., July 7, from carcinoma of the stomach

William Lawrence Bailey, M D Chattanooga (Tenn) Medical College, 1907, aged 40, a Fellow of the American Medical Association, died at his home in Coronaca, S C., October 20

Frank Dexter Harter, M D Chicago Homeopathic Medical College, 1900, aged 42, died at his home in Grand Rapids, Mich , October 31, from septicemia due to an ulcerated tooth

John A. Murphy, M D Jefferson Medical College 1848, aged 93, of Island Mills Tenn died in Johns Hopkins Hospital Baltimore, November 4, after an operation for prostatitis

Frederick Russell S Brown, M D Hahnemann Medical College, Chicago 1898, aged 45, died at his home in Doerun, Ga July 30, from intestinal obstruction

John A. Orr, M D University of Louisville, Ky, 1877, aged 64, of Verona Miss , died in Memphis Tenn , October 24, from appendicitis

John Jefferson Manard, M D Tennessee Medical College, Knoxville 1895, of Morristown Tenn , died near that place about November 2

J R Sample, M D New Orleans School of Medicine, 1886, aged 74, of Summit, Miss , died at the home of his daughter in Jackson Miss., November 8 from acute gastritis

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

LAXATIVE BROMO QUININE

"Laxative Bromo Quinine," which for years has been fraudulently advertised under the claim that it "Cures a Cold in One Day," is put on the market by the Paris Medicine Company, St Louis, Mo Apparently, the business was founded by one E W Grove, president of the concern, who is said to have amassed a fortune in the business As one newspaper has said, the Paris Medicine Company "has changed its promoter from a salaried drug clerk to a multimillionaire in twenty years' time."

In addition to Laxative Bromo Quinine, the Paris Medicine Company also puts on the market "Dr Porter's Antiseptic Healing Oil," "Pazo's Pile Ointment" and "Grove's Pepsin Coffee" While Laxative Bromo Quinine is sold as a "headache remedy" "Grove's Pepsin Coffee" is sold under the claim that it is "the only harmless headache remedy"!

Some of the claims that have been, or are being made for Laxative Bromo Quinine are, in addition to the slogan already quoted

"Cures Grippe—prevents Grippe"

" removes the cause of Colds, Coughs, Headache, Neuralgia, Grippe, Feverish and Malarious Conditions "

'The quinine that does not affect the head"

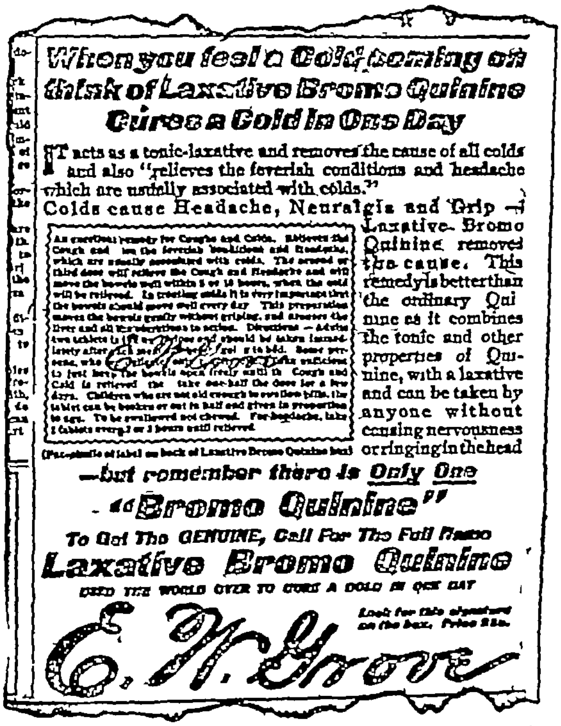
"Laxative Bromo Quinine will be found better than the ordinary quinine"

'Relieves a Cold in the Head in the shortest possible time"

'For Colds, Coughs, La Grippe, Bronchitis, Catarrh and Headache"

"An Improved Quinine Does Not Cause Nervousness Nor Ringing in the Head'

Laxative Bromo Quinine Tablets were subjected to analysis in the Chemical Laboratory of the American Medical Association The report of the chemist, which will appear in full in the Annual Report of the Laboratory for 1915, may be summarized as follows



When you feel a Cold coming on think of Laxative Bromo Quinine Cures a Cold in One Day

It acts as a tonic-laxative and removes the cause of all colds and also "relieves the feverish conditions and headache which are usually associated with colds."

Colds cause Headache, Neuralgia and Grip — Laxative Bromo Quinine removes the cause. This remedy is better than the ordinary Quinine as it combines the tonic and other properties of Quinine, with a laxative and can be taken by anyone without causing nervousness or ringing in the head

(Fac-simile of label on back of Laxative Bromo Quinine box)

—but remember there is Only One "Bromo Quinine"

To Get The GENUINE, Call For The Full Name

Laxative Bromo Quinine

USED THE WORLD OVER TO CURE A COLD IN ONE DAY

Look for this signature on the box. Price 25c.

E. W. Grove

Typical advertisement (from Chicago *Daily News*) of Laxative Bromo Quinine.

CHEMIST'S REPORT

Laxative Bromo Quinine comes in the form of light brown tablets, possessing a faint odor and a bitter, rather sharp taste Each tablet is stamped with the letters "L B Q" Qualitative tests showed the presence of aloin or aloes, quinin or cinchona alkaloids, phenacetin, caffein, starch, small quantities of chlorid and sulphate and a trace of bromid Quantitatively, the tablets were found to have

Phenacetin	44 78 per cent.
Caffein	4 32 per cent.
Quinin (or cinchona alkaloids)	8 91 per cent.
Starch	17 58 per cent.
Ash	5 00 per cent
Bromid (Br')	0 51 per cent.
Chlorid (Cl')	0 40 per cent
Sulphate (SO₄")	0 20 per cent
Aloin or aloes and undetermined (by diff)	18 29 per cent.

From the analysis it is concluded that Laxative Bromo Quinine is a mixture consisting mainly of phenacetin and aloin, with smaller quantities of caffein and quinin and only a trace of bromid

Based on the foregoing, it appears that each tablet of Laxative Bromo Quinine (weighing 4½ grain) contains, as its essential ingredients

Phenacetin (about)	2 grains
Caffein	1/5 grain
Quinin or cinchona alkaloids	2/5 grain
Aloin or aloes	Undetermined

While the name "Bromo Quinine" naturally gives the impression that bromin and quinin are the important ingredients, analysis shows that the bromid content is only 1/200 of the whole and corresponds to only about 1/30 of a grain of potassium bromid or 1/500 part of the pharmacopeial dose.

The formula for Laxative Bromo Quinine Tablets, apparently, was changed about the time the federal Food and Drugs Act went into effect At any rate, an analysis made for the American Medical Association in 1905 indicated that, in addition to the laxative principle, the tablets contained acetanilid, quinin sulphate and caffein No trace of bromin was found at that time An analysis made by the state chemists of North Dakota, and published in the Annual Report of the North Dakota Agricultural Experiment Station for 1907, also failed to disclose the presence of bromin According to this report, when the North Dakota authorities notified the Paris Medicine Company of the results of their analysis, the company stated that previous to the enactment of the federal Food and Drugs Act "they used the combined alkaloids of cinchona as found in the cinchona bark but were advised by the government to use some form of bromid in their preparation, and that they had since been using the bromid and quinin" The North Dakota chemists were thereon furnished a sample of the "New product," which "on analysis showed the presence of a small amount of quinin and bromin"

The attempt of the manufacturers of Laxative Bromo Quinine to make the public believe that this product is "an improved quinin" and "better than the ordinary quinin" as well as "the quinin that does not affect the head," is entirely in keeping with the general policy of falsehood and deceit so characteristic of the nostrum business The real reason of course, that Laxative Bromo Quinine Tablets do not affect the system in the same way as ordinary quinin is that there is practically no quinin present While the average dose of alkaloidal quinin is 4 grains, the amount of this substance in Laxative Bromo Quinine is but 2/5 of a grain Put another way it means that, in order to get an ordinary pharmacopeial dose of quinin, it would be necessary to take ten Laxative Bromo Quinine tablets, and if this were done, the person taking it would get 20 grains of phenacetin, a dangerously poisonous dose

Again referring to the disparity between the composition of this preparation and the name, it is worth noting that one of the rulings, made by the officials who are intrusted with the enforcement of the federal Food and Drugs Act, declares that "an article containing more than one active medicinal agent is misbranded if named after a single constituent" As the active medicinal agents in Laxative Bromo Quinine are not bromid or quinin but rather phenacetin and aloin, it seems strange that the company putting out this product has so far escaped prosecution under the federal law

Laxative Bromo Quinine in addition to containing the dangerous heart-depressing and habit-forming drug, phenacetin, is a fraud both in name and in method of exploitation In a full-page advertisement appearing in the *National Druggist* some months ago, the Paris Medicine Company stated that it was "giving the retail drug trade a much larger profit than they receive on any other leading advertised article" If this is true and so long as there are millions in the sale of this preparation, the publication of the facts just given will not, presumably, greatly affect the business

SOME MISCELLANEOUS NOSTRUMS FOR EXTERNAL APPLICATION

PERRY'S MOTH AND FRECKLE LOTION

Perry's Moth and Freckle Lotion Compound, according to the Report of the Connecticut State Chemists for 1914 is put on the market by Brent Good & Co, New York City According to these chemists, the preparation is another one of the bichlorid of mercury solutions containing in addit on a small amount of a lead salt The Connecticut report, commenting on the claim in the circular that this "lotion is for the safe and speedy eradication of moth patches, freckles and tan' says 'No preparation containing 16 5 parts of corrosive sublimate per 1 000 can be considered a 'safe' remedy even for external use"

PYROXIN

Pyroxin a preparation sold on the 'prescription fake" method is sold as an eyebrow and eyelash grower, for example

> Plain Pyroxin applied to thin straggly eyebrows with finger tips causes them to grow in thick and beautiful '
>
> Eyelashes will come in long and curly if Pyroxin is applied to the roots with forefinger and thumb '

This nostrum has been the subject of reports by the state chemists of North Dakota New Hampshire, Indiana, Ohio Kansas and Michigan These reports agree in exposing Pyroxin as being essentially perfumed vaseline! According to the Indiana State Board report while this stuff sells for $1 a package the cost of the ingredients is 2 cents

ROSE-KAYLOIN

Rose-Kayloin is another one of the preparations put out by the Blackburn Products Co., Dayton Ohio It is advertised in the 'Dr Lewis Baker fake health department" Rose-Kayloin according to the reports of state chemists, is a rose-scented pink powder containing according to the chemists of the Indiana State Board of Health

Sulphur	80 per cent.
Potassium carbonate (washing soda)	15 per cent.

This stuff is recommended in the Dr Lewis Baker "Answers to Correspondents for numerous conditions For instance

> 'Valentine —A person afflicted with chronic ulcers itching skin and constipation, as you say you are, usually has frequent attacks of indigestion causing the poisons of fermented food to be absorbed into the blood This is manifested by pimples ulcers itching etc. I have had great success prescribing an ointment of rose kayloin, 2½ drams lanolin 2 oz. Mix and apply to the skin or sores two or three times daily after a thorough cleansing with soap and water

And then this

> 'Katherine Anxious —You ask for a preparation to remove freckles (and tan) I don t think well of face creams but this face wash is most effective if persistently and regularly used It removes tan and freckles by absorption Potassium Carbonate 3 drams Sodium Chloride 2 drams Rose-Kayloin 2½ drams (package) Orange Flower Water 2 oz. Rose Water 8 oz. Mix and apply two or three times daily as a face wash permitting it to dry on the face.

Other conditions in which Rose-Kayloin—in various combinations—is recommended are "blackheads pimples boils, sore spots and large pores in skin of the face, also 'eczema," 'sty on the eyelids,' "itching piles,' etc

MME. RUPPERT S FACE BLEACH

'Mme Ruppert s World Renowned Face Bleach" is put on the market by Mme A. Ruppert Co., New York City According to the report of the Connecticut Agricultural Experiment Station for 1914, the label declares the presence of 6 per cent alcohol According to the Connecticut chemists the preparation is an alcoholic solution of bichlorid of mercury containing four parts of the mercury salt to 1 000 It also contains a small amount of benzoin This dangerous poison, according to the same authority, "is falsely labeled harmless'"

STILLMAN'S FRECKLE CREAM

Stillman's Freckle Cream has been reported on both by the Indiana State Board of Health in its bulletin on 'Medical Frauds" and by Dr Wiley in his book "1001 Tests" The preparation is put on the market by the Stillman Freckle Cream Co, Aurora, Ill, and advertised under such claims as

> Freckles, tan or liver spots positively removed by using Stillman s Freckle Cream

According both to Dr Wiley and to the state chemists of Indiana, this preparation is another one of the ammoniated mercury pastes and as such is a dangerous caustic poison

TAN-A-ZIN

Tan-A-Zin is said to be put on the market by John A. Brown, Washington, Kan It is another one of the 'Complexion Beautifiers' and, according to the state chemists of North Dakota has for its essential ingredient ammoniated mercury

WRINKLE LOTION

"Wrinkle Lotion' put on the market by Sarah Thompson, Terre Haute Ind, is according to the bulletin on "Medical Frauds' of the Indiana State Board of Health, sold under the claim that it removes wrinkles The same authority declares that it contains the following

Alum	7 per cent.
Glycerin	29 per cent.
Water	64 per cent.

The Indiana chemists further state that the stuff sells at 50 cents and the cost of the ingredients is 3 cents

ZINTONE

Zintone is another of the Cooper Pharmacal Company's nostrums that has been advertised as one of several "Remarkable Formulas Revealed by Valeska Suratt." Some of the claims that have been made for Zintone are

> Produces faultless complexion quickly '
>
> It gives the skin a superb pinky whiteness removes all muddiness and spots in a very short time
>
> In a few weeks your complexion will be almost perfect with a bloom and freshness that is adorable

This marvel has been reported on by the state chemists of Indiana, Kansas, Michigan and Connecticut According to the latter, Zintone is a grayish white powder perfumed with vanillin and having the following composition

Borax	23 per cent.
Stearic acid and soap	77 per cent.

DISCLOSING THE FORMULA

What One Druggist Thinks of the Plea that Formula Disclosure Means Ruin

The frantic efforts of the "patent medicine" fraternity to discredit the Health Department of New York City in its laudable effort to give the public some measure of protection against fraudulent "patent medicines" has been referred to at various times in The Journal. Nostrum mongers always have fought the disclosure of formulas or, in fact the giving of any information that would make it possible for those who wish to drug themselves to know what they are taking The reason is obvious Take away the mystery from a 'patent medicine" and you have taken away its most potent asset.

Several 'patent medicine" concerns have written to New York druggists urging them to refuse to obey the law that is to go into effect on the last day of this year requiring the statement of the potent ingredients of all patent medicines' either to be filed with the Department of Health or to be plainly printed on the labels More than one New York druggist has openly resented this offer on the part of the 'patent medicine makers of protection against legal proceedings if they will violate the law In a recent issue of the New York *Tribune* a letter from one such druggist—Mendel Zagat—is printed The letter was addressed to Smith Kline & French Co of Philadelphia the purveyors of 'Dr Hand s Remedies ' In replying to the letter received from Smith, Kline & French Co Mr Zagat, in the name of his company, thanks the concern for its letter but adds

> 'We feel, however, that we shall not have to avail ourselves of your kind offer to protect us in breaking the law"

Further, the druggist suggests, that "no manufacturer producing an honest product should be averse to obeying Dr Goldwater's regulations" Moreover, Mr Zagat points out that the fact that Smith, Kline & French Co are opposed to giving the Health Department a statement of the ingredients of its preparations "is strong presumptive evidence that the claims you make for these preparations are false" Then follows this statement which, coming from an expert pharmacist, nails the specious falsehood so loudly and widely put forward by the nostrum interest

> "That you are afraid of revealing the nature of your preparations to your competitors is absurd There is no preparation on your list that cannot be matched or bettered by one in the National Formulary or the United States Pharmacopeia The sale of your preparations, and of others like them, depends on advertising and not on therapeutic value"

Truth, the whole truth and nothing but the truth and, as Mr Samuel Hopkins Adams says in commenting on the letter as it appears in the *Tribune*

"What is true of the Smith, Kline & French Co's secret preparations is true of practically all secret nostrums The secrecy is but a pretense, a 'bluff' It is reduced to the lowest terms of absurdity by the clear logic of Mr Zagat's professional and expert knowledge"

Correspondence

The Choice and Technic of the Anesthetic

To the Editor—The results of the anesthetic experiments of A. D Bevan, as described in his excellent paper (The Journal, Oct 23, 1915, p 1418), are very interesting and should be of benefit to any one interested in this important branch With one item, however, I take exception, that is, the statement that "warm ether possesses no advantage over cold" The work and experiments of anesthetists prove otherwise.

To a patient suffering from shock do we apply cold externally or internally? Nay, rather we apply heat Why is chloroform safer in warm climates than in cold? Because it is warmer Any fluid in a can or bottle is warmer in summer than in winter No matter how well heated be a room, the air in it cannot prevent the formation of frost on the window It cannot keep the window warm The air in a comfortably heated room is pleasant to breathe The chilliness of very cold air as we step outside of the house is unpleasant to our mouth, nostrils, lungs Even after we have become accustomed to it, a deep breath is not pleasant Does not the same principle apply to ether? Cold ether causes the formation of "snow" on the mask Warmed, it does not Cold causes contraction of tissues Heat causes relaxation and is soothing Warm ether causes less coughing and is more pleasant to the patient, especially if given in warm vapor with oxygen The opinion of anesthetists is opposed to that of Dr Bevan

A. S McCormick, M D, Akron, Ohio

A National Examination Board for License to Practice

To the Editor—In The Journal, Nov 6, 1915, p 1652, attention was called to the board examinations for entrance to colleges of arts, and to the fact that they were held all over the country simultaneously, that they were recognized as sufficient by all colleges, and the fees received made the board practically self-supporting It is formed by representatives of universities and high schools or preparatory schools The examination questions are prepared by experts, and the answers are graded by experts

If this is possible for the many colleges in the country, how much easier it would be for the fewer state licensing boards if those of all, or at first even most of the states should form a similar board for examining graduates in medicine for license to practice If examinations were held by such a representative board there could be no question as to the justice of reciprocity, and the long desired national examination would be attained The laws of the states do not make it necessary for the members of the state boards to examine students personally, but to see to it that suitable examinations are held Nothing would help more to make the standards uniform and high throughout the country

N S Davis, M D, Chicago

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

MEDICAL JOURNALS AND HONEST ADVERTISING

To the Editor—Referring to your editorial "May We Count on Your Assistance?" (Current Comment, The Journal, November 13, p 1736) The Association, which now renders such valuable aid to its members by keeping them informed as to clean advertised drugs, could still further aid physicians by publishing at intervals a list of those medical journals that 'are making a creditable stand for decency in advertising" In your position you can more readily separate the sheep from the goats It may be a delicate task, but it is one that would be an aid to the rank and file of the profession

A A. Stafford, M D, San Francisco

To the Editor—Can you send me a list of medical journals (not state journals) that are devoted to therapeutics or the diagnosis and treatment of internal diseases, and that contain no objectionable advertisements?

G A Chilgren, M D, Burlington, Iowa

To the Editor—Your editorial "May We Count on Your Assistance?" has appealed to me I have just notified four journals to discontinue, and for heaven's sake to clean up their advertising pages Please send me a list of good journals on surgery, gynecology and children's diseases.

Leo W Chilton, M D, Canyon City, Ore.

Answer.—The following journals limit advertising of proprietary medicinal preparations to announcements of such products as have been accepted for New and Nonofficial Remedies by the Council on Pharmacy and Chemistry of the American Medical Association

American Journal of Diseases of Children, American Medical Association, 535 North Dearborn Street, Chicago, monthly, $3
American Journal of the Medical Sciences, Lea and Febiger, 706 Sansom Street, Philadelphia, monthly, $5
American Journal of Obstetrics and Diseases of Women and Children, William Wood Company, 51 Fifth Avenue, New York, monthly, $5
American Journal of Physiology, Baltimore, monthly, $5 50
American Journal of Roentgenology, New York, monthly, $5
American Journal of Tropical Diseases and Preventive Medicine, New Orleans, monthly, $2
Archives of Ophthalmology, New York, bimonthly, $5
Arizona Medical Journal, Phoenix, Ariz, monthly, $2
Archives of Internal Medicine, American Medical Association, 535 North Dearborn Street, Chicago, monthly, $4
Boston Medical and Surgical Journal, 101 Tremont Street, Boston, weekly, $5
Bull- n of the Medical and Chirurgical Faculty of Maryland, Baltimore, monthly, 25 cents
Cleveland Medical Journal, 2318 Prospect Avenue, Cleveland, monthly, $2
California State Journal of Medicine (California and Nevada), San Francisco monthly, $1
Colorado Medicine, Denver, monthly, $2
Journal of the American Medical Association, American Medical Association, 535 North Dearborn Street, Chicago, eekly, $5
Journal of the Arkansas Medical Society, Little Rock, Ark, monthly, $1
Journal of Experimental Medicine, New York, monthly $5

Journal of the Florida Medical Association, Jacksonville, Fla monthly, $1
Journal of the Medical Association of Georgia, Augusta, Ga, monthly, $1
Journal of the Indiana State Medical Association, Fort Wayne, Ind monthly $1
Journal of Infectious Diseases, 629 South Wood Street, Chicago, bimonthly, $5
Journal of the Iowa State Medical Society, Des Moines, Iowa monthly, $2
Journal of the Kansas Medical Society, Topeka, Kan, monthly $2
Journal of Laboratory and Clinical Medicine, C. B Mosby Company St. Louis, monthly, $3
Journal of the Maine Medical Association, Portland, Me., monthly $2
Journal of Medical Research Boston irregularly, $4
Journal of the Michigan State Medical Society, Grand Rapids, Mich, monthly, $3 50
Journal of the Missouri State Medical Association, St Louis, monthly $2
Journal of the Medical Society of New Jersey, Orange, N J, monthly $2
Journal of the Oklahoma State Medical Association, Muskogee, Okla, monthly $2
Journal of the South Carolina Medical Association, Anderson S C., monthly, $2
Journal of the Tennessee State Medical Association, Nashville Tenn monthly $2
Kentucky Medical Journal, Bowling Green Ky, monthly $2
Memphis Medical Monthly Goodwyn Institute, Memphis, Tenn monthly $1
New Mexico Medical Journal, Las Cruces, N M, monthly, $2
New York State Journal of Medicine, New York, monthly, $1
Northwest Medicine (Oregon, Washington, Idaho and Utah) Seattle, monthly, $2
Ohio State Medical Journal Columbus Ohio monthly $2
Old Dominion Journal of Medicine and Surgery, 116 East Franklin Street, Richmond Va monthly, $2
Ophthalmic Record Chicago monthly $4
Ophthalmology, Seattle quarterly, $5
Pan American Surgical and Medical Journal, New Orleans, monthly $2
Pennsylvania Medical Journal, Athens Pa monthly, $2
Southern Medical Journal Birmingham Ala monthly $2
Surgery, Gynecology and Obstetrics Surgical Publishing Company, 30 North Michigan Avenue Chicago, monthly, $5
Texas State Journal of Medicine, Fort Worth, Texas, monthly, $1 50
Wisconsin Medical Journal Milwaukee Wis monthly, $2
West Virginia Medical Journal, Huntington, W Va monthly, $1 (after Jan 1 1916)

TREATMENT OF FRIEDREICH S ATAXIA

To the Editor —One of our members requests us to furnish him with information on the modern treatment of Friedreich s ataxia. We can find considerable in the recent literature on hereditary ataxias but little, if anything, along the line of treatment. Can you help us out? Even though this condition is generally considered hopeless there must have been some serious efforts made toward amelioration of symptoms and retardation of progress of the disease.

San Diego Medical Library Association
Robert Pollock M D Secretary

Answer.—As this disease, so far as we know, is always inherited, as a rule begins in early childhood and consists of maldevelopment of the central nervous system, especially of the cerebellum and certain fiber systems of the spinal cord it is obvious that treatment can only be symptomatic. In every suspected case however there should be a Wassermann test and complete examination of the cerebrospinal fluid including the Lange colloidal gold test as congenital syphilis may be responsible for an almost identical clinical picture, in fact ancestral syphilis is given as a factor in the true Friedreich s ataxia If either patient or parents give evidence of syphilis specific treatment should be used. According to Dana arsenic may give temporary relief in the early stages For the most distressing symptom the ataxia we fortunately have an important remedy, the so-called Frenkel reeducative exercises, which may be applied in this disease in the same manner as in tabes The object is to reeducate the limbs by means of the eyes, and by utilizing to the full those pathways which are not degenerated The principle and methods are fully set forth in H S Frenkel's "Tabetic Ataxia Its Treatment by Systematic Exercises,' translated by L Freyberger (Philadelphia, P Blakiston, Son & Co, 1902, price $3)

CARBOHYDRATE CHANGES IN BAKING AND BOILING POTATOES — NATURE OF EDEMA IN CARDIAC WEAKNESS

To the Editor —1 Please describe the carbohydrate changes involved in baking a potato and boiling one. What is it that accounts for the sweeter taste of a baked potato?

2 Is edema of the extremities in cardiac pathology construed as a conservative process or not?

R W Adams M D, Newport Center, Vt.

Answer —1 When a potato is boiled, the starch, which is granular in a raw potato is converted into the so-called soluble starch, a more readily digestible form The temperature of boiling is not sufficient in the short time required to boil a potato, to hydrolyze much of the starch In baking a potato, a crust is formed on the outer surface The temperature is higher within the potato because the tension is greater, owing to the confining of the water present in the potato With a higher temperature and tension—as occurs in baking—there is more hydrolysis than in boiling The starch is converted into dextrin, which accounts for the sweeter taste of a baked potato

2 The edema which occurs in cardiac weaknesses is not a conservative process It would more likely be considered a progressive process As the edema increases, the difficulty of the heart becomes greater and there is edema of the heart muscle, thus increasing the inability of the heart muscle to perform its work In other edematous tissues the interference of the circulation must be considered as preponderantly adverse to the tissues affected as well as to the heart.

IODEOL AND IODAGOL

To the Editor —The salesman has been making such extravagant claims for Iodeol and Iodagol that I am sending the literature for investigation

Francis Schill M D Johnstown Pa

Answer.—Both Iodagol and Iodeol are said to be manufactured by E. Viel & Co, Paris They are imported into this country by David B Levy Inc Both appear to be iodin preparations They are called in the advertising literature "Electro-Chemical Colloidal Iodine." Iodeol is recommended in tuberculosis, pneumonia typhoid, asthma, syphilis and other conditions as "iodine with all its potentialities stripped of all its drawbacks—non-irritating, non-caustic, non-toxic, non-cumulative, injectable without pain, "many times more active than ordinary iodine" Iodagol is recommended in specific urethritis cystitis arthritis, etc., under similar claims According to the advertising literature 'It is, in fact, known that iodine when brought into the colloidal state increases its action tenfold and diminishes in toxicity to the same extent" No such fact is generally known, it would be difficult to demonstrate, and no proof is offered Nor is any adequate evidence offered in support of the therapeutic claims made for Iodeol and Iodagol, although the assertions as to the action of Iodeol in tuberculosis and pneumonia in particular are susceptible of test by laboratory and animal investigation Our correspondent is justified in calling the claims "extravagant."

THE TEACHING OF PEDIATRICS

To the Editor —Can you furnish me references to articles on the teaching of pediatrics?

C D W

Answer.—The following is a list of recent articles on this subject

Marfan, A B Pediatrics in the Medical Course *Presse méd* Sept. 16 1911
Medin O Teaching of Pediatrics at the University of Stockholm *Jahrb f Kinderh* November 1911
Improvement of Instruction in Pediatrics, Berlin Letter The Journal March 11 1911 p 756
Epstein J Special Training in Pediatrics *Am Jour Obst* July 1914
Rhodes C. A Present Status of Pediatric Teaching in Sixteen Southern States Forming Southern Medical Association *Georgia Med Assn Jour* August, 1914
Royster L T The Pediatrician and the Section *on Diseases* of Children The Journal, Aug 14 1915 p 567

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alaska Juneau, Jan 4, 1916 Sec, Dr Harry C DeVighne, Juneau

Arizona Phoenix, Jan 4 5, 1916 Sec, Dr John Wix Thomas, National Bank of Arizona Bldg, Phoenix

California Los Angeles December 14 Sec, Dr Charles B Pinkham, Room 527 Forum Bldg, Sacramento

Colorado Denver, Jan 4, 1916 Sec, Dr David A Strickler, 612 Empire Bldg, Denver

Delaware Dover and Wilmington, December 14 Sec, Dr H W Briggs, 1026 Jackson St, Wilmington

Florida Jacksonville, December 7 8 Sec, Dr E W Warren, 102 Front St., Palatka

Kentucky Louisville, December 7 9, Sec, Dr A T McCormack, Bowling Green

Louisiana New Orleans, December 2 4 Sec, Dr E L. Leckert, 716 Macheca Bldg, New Orleans

Maryland Regular Baltimore, December 14 Sec, Dr J McP Scott, Hagerstown Homeopathic, Baltimore, December 15 16 Sec, Dr O N Duvall, 1817 N Fulton Ave Baltimore

Minnesota Minneapolis, Jan 4 7, 1916 Sec, Dr Thomas S McDavitt, 814 Lowry Bldg, St. Paul

Missouri St Louis, December 13 15 Sec, Dr J A B Adcock, State House, Jefferson City

North Dakota Grand Forks, Jan 4 7, 1916, Sec, Dr G M Williamson, Grand Forks

Ohio Columbus, December 7 9 Sec, Dr George H Matson, Columbus

Oregon Portland, Jan 4, 1916 Sec, Dr L H Hamilton, Medical Bldg, Portland

Rhode Island Providence, Jan 6 7, 1916 Sec, Dr Gardner T Swarts, Providence

Utah Salt Lake City, Jan 3, 1916 Sec, Dr G F Harding, 407 Templeton Bldg, Salt Lake City

Virginia Richmond, December 14 17 Sec, Dr J N Barney, Fredericksburg

Washington Walla Walla, Jan 4, 1916 Sec., C N Suttner, Baker Bldg, Walla Walla

Oklahoma April Report

Dr John W Duke, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, April 13-15, 1915 The total number of subjects examined in was 10, total number of questions asked, 95, percentage required to pass, 70 The total number of candidates examined was 12, of whom 9 passed and 3 failed Eighteen candidates, including 2 osteopaths, were licensed through reciprocity Seven candidates were granted reregistration licenses and 1 candidate's license was reinstated The following colleges were represented

College	Year Grad	Per Cent.
PASSED		
Indiana University	(1914)	84
University of Louisville	(1914)	71
Baltimore Medical College	(1895)	71
Baltimore University	(1904)	73
College of Physicians and Surgeons, Baltimore	(1907)	78
St Louis University	(1914)	77
Meharry Medical College	(1914)	74, 82
Memphis Hospital Medical College	(1911)	72
FAILED		
University of Arkansas	(1912)	66
Meharry Medical College	(1914)	46 1
Vanderbilt University	(1893)	58 3

College	Year Grad	Reciprocity with
LICENSED THROUGH RECIPROCITY		
College of Physicians and Surgeons, Little Rock	(1911)	Arkansas
University of Arkansas	(1907)	Arkansas
Denver and Gross College of Medicine	(1904)	New Mexico
George Washington University	(1911)	Maryland
Atlanta School of Medicine	(1911)	Georgia
Hahnemann Medical College and Hospital, Chicago	(1896)	Kansas
Illinois Medical College	(1902)	Michigan
Kansas Medical College	(1907)	Kansas
Detroit College of Medicine	(1910)	Michigan
Eclectic Medical University, Kansas City	(1906)	Arkansas
Marion Sims Beaumont Medical College	(1903)	Missouri
St Louis University	(1914)	Missouri
College of Physicians and Surgeons, Memphis	(1911)	Tennessee
Memphis Hospital Medical College	(1911)	Arkansas
Vanderbilt University	(1905)	Tennessee
University of Vermont	(1905)	Vermont

The following questions were asked

ANATOMY

1 How much of length of spinal column is made up by intervertebral disks? 2 At what point does the spinal cord terminate? 3 Describe arrangement of gray and of white matter in spinal cord 4 Give origin and termination of thoracic duct 5 Give shape, weight and position of heart Describe the pericardium 6 Into what two principal parts is the kidney divided? In which part are the functionating structures situated? 7 Where is Petit's triangle? How is it formed? 8 How would you differentiate a movable kidney from a wandering spleen by palpation? 9 Of what artery is the middle meningeal a branch? What relation does it bear to the dura mater? 10 Give average number of red and of white blood corpuscles in a cm of blood

CHEMISTRY

1 What is the chemical antidote for iodin? 2 Chemically, what is albumin? 3 How would you determine, chemically, whether a urinary deposit was composed of urates or phosphates? 4 How does potassium permanganate act as a disinfectant? 5 What is the composition of the pancreatic juice? 6 What is the difference between an alloy and an amalgam? 7 What is chloroform? Give the chemical name and formula and properties 8 What element is constantly present in the coloring matter of the blood and what elements are common in all acids? 9 Complete the equation $CaCO_3 + 2HCH = ?$ 10 Give antidotes for following Carbolic acid, formaldehyd, nitric acid

SURGERY

1 Give a classification of burns and constitutional symptoms 2 What diseases attack the antrum of Highmore? 3 What are the causes of esophageal stricture? 4 Define volvulus and give its treatment 5 What are the predisposing and what are the exciting causes of abdominal hernia? 6 Describe dermoid cysts In what situations are they most commonly found? 7 What are the chief surgical diseases of the groin? 8 Give symptoms of stone in the kidney and treatment of same 9 Give diagnosis and treatment of floating kidney 10 What are the causes of ischiorectal abscess? Give treatment.

MATERIA MEDICA AND PRACTICE

1 How soon is Widal's test positive in typhoid fever? 2 How would you treat average case of intestinal stasis? 3 Treat the average case of incipient tuberculosis 4 What is the incubation period of scarlet fever? 5 Diagnose and treat mitral regurgitation with broken compensation 6 Give average dose of sulphate of morphin 7 What is the emetic dose of apomorphin? 8 What effect has digitalis on heart and why? 9 What is an astringent? Give example 10 Give hypnotic dose of chloral hydrate

GYNECOLOGY

1 Diagnose retroversion and differentiate it from retroflexion 2 Differentiate pyosalpinx from ectopic pregnancy 3 Give difference in the bleeding due to carcinoma of cervix and that of submucous fibroid 4 Name some dangers of sharp curets 5 When should the radical breast operation be done?

OBSTETRICS AND HYGIENE

1 Describe the changes which take place in the generative organs during pregnancy 2 What conditions may be mistaken for pregnancy? 3 On making the first examination of a woman in labor, how would you proceed and what would you expect to learn? 4 What is dry labor? How does it differ from normal labor, and what are the dangers accompanying it? 5 How would you distinguish one shoulder from the other where the hand and arms could not be felt? 6 How soon after delivery would you ligate the cord? How should it be dressed? 7 What condition during the third stage of labor would cause you to insert your hand into the uterus? 8 Give the external diameters of the pelvis 9 Give a patient having tuberculosis instruction to prevent communicating it to other persons 10 What are the most common poisons occurring in food How may we prevent this occurrence?

PHYSICAL DIAGNOSIS

1 Name the normal thoracic landmarks 2 Describe the phthisical thorax 3 What is dyspnea? 4 Describe the emphysematous thorax 5 Name the types of dyspnea Their causes 6 Define cyanosis How recognized? 7 Diagnose displacement of the larynx and give causes 8 Describe bronchial breathing 9 Name the respiratory sounds. 10 Diagnose acute bronchitis.

TOXICOLOGY AND MEDICAL JURISPRUDENCE

1 In a case of death by poison, what organs would you select for chemical examination, and how would you prepare them for the chemist? 2 Give symptoms caused by eating poisonous fungi In fatal cases how soon does death occur? 3 What are the important symptoms of poisoning by digitalis? 4 Name maximum dose of (a) tinct of opium, (b) heroin, (c) white arsenic 5 Give symptoms of poisoning from cocain and the treatment 6 What is the duty of the state regarding preventable diseases? Name ten preventable diseases 7 Define medical jurisprudence 8 When may abortion be legally permitted? 9 In case of poisoning, the nature of the poison being unknown, how should the case be handled? 10 What is the best method or course to pursue in order to detect feigned mental disorder?

BACTERIOLOGY AND PATHOLOGY

1 Give the pathology of dry and moist gangrene 2 What is eccentric and concentric atrophy? 3 Describe briefly calcareous infiltration 4 What are retention cysts congenital cysts extravasation cysts? 5 Give the pathologic changes that take place in hyperemia of the liver 6 What is infarction? Why are some red and some white? 7 Differentiate septicemia and pyemia 8 Name four ways by which tubercle bacilli may enter the body 9 Give the pathologic changes that take place in arteries infected by syphilis 10 Give the pathology of cerebrospinal sclerosis

PHYSIOLOGY

1 Name three uses of the blood 2 Give functions of the skin 3 Give functions of the cerebrum 4 Describe the sympathetic nervous system and tell its office 5 What are the chief factors concerned in stimulating the secretion of the gastric juice? 6 What do you understand by the term digestion? Name the organs of digestion 7 In what part of the brain is the center for sight? 8 What is the office of the cerebellum? 9 Describe spinal nerves in general where they leave the cord and divide into anterior and posterior branches and tell how the anterior and posterior divisions differ in functions 10 Give the name and origin of the nerve that supplies motor function to the face.

Utah Reciprocity Report

Dr G F Harding, secretary of the Utah State Board of Medical Examiners, reports that three candidates were licensed through reciprocity Oct 4, 1915 The following colleges were represented

College	Year Grad	Reciprocity with
College Physicians and Surgeons Chicago	(1901)	Illinois
Northwestern University	(1908)	Wyoming
Columbia University, College of Phys and Surgs	(1911)	New York

Book Notices

GESCHICHTE DER AUGENHEILKUNDE. Von Dr J Hirschberg Drittes Buch Zwölfter Abschnitt—Amerikas Augenarzte im 19 Jahrhundert Paper Price 6 marks Leipzig Wilhelm Engelmann, 1915

The preparation of a reasonably complete and well-balanced history of ophthalmology is no light task. The basic material needed for such a work is much more scattered and more difficult of access than that required for similar investigations in other sciences while much important information—biographies in particular—can in many instances be obtained only by painstaking and repeated inquiry and search among unpublished and private sources Many years ago Professor Hirschberg understook the work of collecting, sifting and publishing ('Handbuch der gesamten Augenheilkunde," second edition) the data for a history of ophthalmic science in all countries since its shadowy beginnings as a special department of surgery in Ancient Egypt 4 000 years ago As a consequence we owe this tireless worker a debt of gratitude for his remarkable series of books on the subject, and if, as in the present volume he has fallen short of the standard set by him in some of his earlier contributions to the subject, we who know the difficulties of his problem can excuse his partial failure to solve it.

The defects of the volume under examination are much the same as those of Hirschberg's "Englands Augenärtze" (THE JOURNAL, July 31 1915 p 449) In the first place, the title is quite misleading The author is supposed to be writing a history of ophthalmology in the United States during the nineteenth century, we find, however that a considerable amount of space is devoted to the doings of ophthalmologists (and not always of Americans) in the twentieth century It would be an improvement to delete from the subtitle the words *im 19 Jahrhundert* The preliminary review of general medical and surgical conditions in the United States though ostensibly carried down to the date of publication of the book, is very defective. For example, the latest educational number of THE JOURNAL referred to (or seemingly, consulted) is that of 1905—just ten years behind the times—and surely we have advanced somewhat during the past decade! What is said about American instruction in ophthalmology is especially unfair Nothing at all, for example is said of the special provisions for a thorough instruction developed in the last few years at the Universities of Colorado and Minnesota and leading to a special degree

In one point, at least the volume under discussion is superior to its predecessors the items in its various bibliographies are, in general arranged in chronological order This was not true of Professor Hirschberg s former volumes in which, not infrequently the bibliographies were compiled in the greatest confusion

One of the greatest errors in the present work consists in the failure to observe a just proportion between the space allotted to individual ophthalmologists For example, a long bibliography is appended to the sketch of A. R. Baker, and either none at all or but scanty and incomplete ones to those of men like Aaron Friedenwald. Extremely scanty, too, are the sketches themselves, especially of such widely known men as Boerne Bettman (one-third page), George Strawbridge (one-third page), Leartus Connor (two-thirds page), John Green (one and two-thirds pages), Henry Gradle (one-half page), Aaron Friedenwald (fourteen lines), Charles A. Oliver (one and one-third pages), William F Norris (one and two-thirds pages), George Harlan (three-fourths page), Charles John Kipp (one-third page) and A. A. Hubbell (one-third page) In most of these instances the extreme brevity of the sketches is a matter for wonder in view of the fact that abundant information is supplied about these men by the very journals, society reports, etc, which Professor Hirschberg himself acknowledges to have been his sources The reason for this cavalier treatment of leading American ophthalmologists is a little difficult to understand Then, too, many of the important American ophthalmologists are not merely dismissed with a few brief words, they are wholly omitted absolutely excluded from this partial hall of fame Among those who have been thus dealt with are Duff Warren Greene, M H Post, Edward Shakespeare Joseph Pancoast, Charles Michel, George Chadwick and O A Griffin

The author seems to have an uneasy feeling that he may have forgotten some deserving names in American ophthalmology because he complains that he has looked in vain in the "American Encyclopedia of Ophthalmology" for an account of our illustrious dead under the heading "American Oculists" The learned professor is not aware that, at least in the polite literature of this country, the word *Augenärtze* has not exactly the same significance as "oculists" In this particular, as in some others, we have not followed the German usage In the list of American textbooks of ophthalmology, we note incidentally, the omission of Ball's 'Modern Ophthalmology" one of the best and most widely used books in this country A matter of minor (and yet sufficient) importance is the great multitude of typographic errors which spot and mar this book on every page. Thus for a very few examples p 8, "responsability", p 11, "in ninety per cents of our medical colleges", p 20 "Hubbel," for "Hubbell", p 65 "A B Prince, Jacksonville, Jllin", p 153 "Edwards Hartshorne", p 156, "cylindrical tenses", p 166, 'Charles Archibald Robertson" for "Richardson", p 184, "Christopher Smith Fenner", p 188 "Blencowe Fryer" Professor Hirschberg tells us—and we heartily approve the sentiment—that he is proud of the record of his former pupil, William Campbell Posey of Philadelphia, but surely that does not justify writing him 'Poosey" Even the index, in which if in any place the utmost accuracy should exist, is full of errors The most provoking of these is the frequent setting down of a page number as just one less than the proper one For example, Culbertson, Howard, 180 (should be 181)

Of almost every one of Professor Hirschberg's former historical volumes, one might truthfully say "This is not a book so much as the almost chaotically assembled material for a book", yet, of the present volume one can hardly say so much, even the material for a history of ophthalmology in America is not present in this work Some day, when Professor Hirschberg has finished the collection of data for a history of ophthalmology (collecting for all countries with equal assiduity) he will, we trust, proceed to the writing of that history

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DISEASES OF THE NERVOUS SYSTEM A Textbook of Neurology and Psychiatry By Smith Ely Jelliffe M D Ph D Adjunct Professor of Diseases of the Mind and Nervous System New York Post Graduate Medical School and Hospital and William A White M D Superintendent of the Government Hospital for the Insane, Washington D C. Cloth Price $6 net. Pp 796 with 341 illustrations Philadelphia Lea & Febiger 1915

This is a new textbook of neurology and psychiatry, not a mere verbal alteration of the old books There are three divisions Part 1 treats of the physicochemical systems (vegetative or visceral neurology), Part 2, the largest portion of the book deals with sensorimotor neurology, and Part 3 is devoted to psychic or symbolic systems (neuroses and psychoses) The authors have demonstrated that with some effort it is possible not only to write in good literary style, but also to condense for in most cases only one of these forms of writing is practiced One may well call this an up-to-date *text-book without* violating the truth for nothing in the recent literature seems to have escaped these vigilant seekers after the new Indeed one may even discover that which is made today and may be overthrown tomorrow, but we can easily overlook this anxiety to be modern, when for many years our new editions of older textbooks brought nothing that was not at least five years old One of the best chapters in the book is that on the autonomic and sympathetic nervous systems and the internal secretions It embodies everything worth knowing of that difficult theme from the physician s and student's point of view The illustrations elucidating this part of the textbook have been taken from the recent monographs on the subject, and are excellent guides to a proper understanding of the theoretical and practical sides of the subject The chapters dealing with methods of neurologic and mental examinations are modern in every detail, though rather brief They contain material which can be well elaborated by the teacher in the class room, after the student has mastered the bare outlines Of other portions of the book we may emphasize the excellence of the chapter on syphilis of the nervous system, which contains almost everything known on diagnosis and therapy, including the Swift-Ellis treatment of late syphilis of the nervous system

As both authors are distinctly and avowedly freudian in their tendencies, it was to be expected that freudian doctrines would find a prominent place among the neuroses and psychoses chapters of this book It is remarkable, however, that both authors have been able to exercise self-restraint, for psychanalysis has not usurped too much space With the clearness usual with the authors, the entire field of psychiatry has been set forth from kraepelinian concepts, slightly tinged with freudianism This textbook may profitably be utilized by the thinking physician and the advanced medical student Indeed, even the neurologist will find in it much that he has seen elsewhere, but not in such compact form

On Pharmaco Therapy and Preventive Inoculation Applied to Pneumonia in the African Native With a Discourse on the Logical Methods Which Ought to be Employed in the Evaluation of Therapeutic Agents By *Sir Almroth E Wright, M D, F R S* Cloth Price, $2 net Pp 118 New York Paul B Hoeber, 1915

This book consists of a report to the Witwatersrand Native Labor Association on work undertaken under its auspices directed to the discovery of some method of mitigating the ravages of pneumonia among the native laborers in the Rand mines in South Africa The material was published in the London *Lancet* in 1912 and 1914 The outstanding result of this investigation appears to be that the prevalence of pneumonia among the native workers in the Rand mines is to be ascribed to the bringing together in close contact in compounds of a population which has, as a racial character, a low resisting power to the pneumococcus, and that it is possible by means of prophylactic injection of pneumococci to increase greatly the resistance to pneumococcus infection and thus diminish the incidence and death rate from pneumonia among the native laborers When the author says that in taking up experimental work on the phagocytobactericidal action of human blood with reference to pneumococci he is "breaking new ground," it shows that he is not familiar with the results of such work already recorded in medical literature It must be regarded as unfortunate also that throughout all this work no consideration whatever is paid to the different groups of pneumococci as determined by immunologic reactions All workers in this field will regret exceedingly that no information is vouchsafed as to the particular immunologic group to which belong the strain or strains of pneumococci used in the preparation of the vaccine employed in the prophylactic inoculation and in the other work to test the resistance of natives and others

A Text Book of Histology By Rudolph Krause, A O Professor of Anatomy at the University of Berlin Translated from an Original Manuscript and Printed Only in the English Language Cloth Price $2 50 Pp 274, with illustrations New York Rebman Company, 1915

This textbook is a companion volume to the author's "Course in Normal Histology," to the illustrations in which the reader is constantly referred Written by a man of real scientific eminence with a creditable research record, the book has many unique features which should commend it to teachers One notes with pleasure that the author recognizes the impossiblity of giving any structural definition to which all cells will conform, and the necessity of correlating the information gained in different fields of inquiry It is one of the few books in which an attempt is made to establish a relation between histology and gross anatomy, on the one hand, and between histology and physiology, on the other The absence of adequate illustrations is not wholly a disadvantage, when we reflect that histologic study is always carried on in presence of the material, and when we remember the baneful influence on the student's objectivity of the conventional caricatures which so commonly disfigure our textbooks on this subject Such figures as are reproduced are new, or from the work of recognized authorities Krause has made an honest attempt to present to students, as far as can be done in a book of this scope, the present status of the science, and throughout has enriched the text with facts and conclusions based on his own broad experience

Index of Prognosis and End-Results of Treatment By Various Authors Edited by A Rendle Short M D, B S, B Sc, Hunterian Professor, Royal College of Surgeons. Cloth Price, $7 Pp 570 New York William Wood & Co, 1915

This is a companion volume to the index of treatment and index of differential diagnosis produced by the same publishers It represents essentially a compilation from the literature with careful editorial supervision It is perhaps a correct presentation of medical efficiency at the time of publication Numerous statistics are cited, and the results achieved in various localities are balanced one against the other in arriving at the status of results in various conditions The various factors concerned in prognosis are considered under separate subheadings The work presents, of course, chiefly the English point of view, although American literature has not been overlooked in compiling it The book is marred by few didactic statements, though some do occur For example, "No one who has been infected with syphilis in the past should be permitted to marry until his Wassermann reaction has proven to be negative," or the following "Of the different functional tests the most valuable is the phenolsulphonephthalein test described by Rowntree and Geraghty The simplest for the practitioner is the iodid of potash test" The price of the book would seem to be somewhat disproportionate to its evident cost of production

Food—What It Is and Does By Edith Greer Cloth Price, $1 Pp 251, with illustrations Boston Ginn & Co 1915

This little book is intended as a school text, especially where cookery is not a school course School instruction with regard to the nature, preparation and uses of foods serves a useful purpose, and an interesting and instructive book might be arranged to meet this need Unfortunately the principles (whatever they were) that guided the selection and arrangement of material have produced a confused assemblage of facts No fixed principles seem to have guided the selection of illustrations, some (as the full-page pictures of "Old Chinese Dishes," opp p 224 and "A Tea Tray," opp p 206) are irrelevant to the subject, while one ("Grinding Buckwheat," p 23) would surely be misleading to children if not accompanied by further explanation Altogether, the book seems praiseworthy as an earnest attempt rather than as a notably successful achievement

Student's Text Book of Hygiene By W James Wilson, M D, D Sc, D P H, Bacteriologist to the Counties of Down and Antrim Cloth Price, $2 50 Pp 270 with illustrations New York Rebman Company, 1915

While based on lectures given to the undergraduate class in hygiene in Queen's University, Belfast, and primarily intended for medical students, Dr Wilson's book will also prove of interest to teachers, sanitary inspectors and others interested in public health Though making no claim to originality, the book is a clear, concise summary of the best authorities on the various subjects included in modern hygiene It is interestingly written, well printed and copiously illustrated

Practical Oral Hygiene Prophylaxis and Pyorrhea Alveolaris By Robin Adair, B S, M D, D D S, *Professor of Oral Prophylaxis, Southern Dental College* Second Edition Cloth Price, $5 Pp 462 with 121 illustrations Atlanta, Ga Oral Hygiene Publishing Company, 1915

Recent advances in dental science have encouraged the author to undertake the preparation of a new edition of this work The book is practical, but is, of course, written with a special reference to the needs of the dentist rather than those of the physician The author seems hardly prepared to accept the recent work on endamebas in pyorrhea, but places more reliance on the mechanical treatment The book contains many new illustrations and several popular dental lectures

Miscellany

A Community Sickness Survey

In 1912 and 1913 a study was conducted in Dutchess County, New York, by the State Charities Aid Association to secure reliable data relative to sickness nursing care and treatment among the general population. The period of study included all of 1912 and four months of 1913, and was made at the request of the Thomas Thompson Trust, an agency interested in the improvement of social conditions.

It was planned in this investigation to secure directly from families as full and accurate data as possible concerning sickness, including medical and nursing service obtained, the sufficiency, cost and need for domestic assistance in homes where sickness existed, etc. In Pamphlet 136 of the association the results of this study are set forth and recommendations made for the improvement of existing conditions.

Many difficulties were encountered in carrying out the study in a satisfactory manner. During the sixteen months' period 1,600 cases of sickness were found to have occurred, 786 of which were communicable, 673 were general medical and surgical cases and 141 were obstetric cases. There were in addition 452 cases of chronic illness recorded but for various reasons they are not considered in this study. Of the 1,600 patients 1,217, or 76 per cent., secured medical care—1,058 in their homes, 101 in hospitals, fifty-eight both at home and in hospitals, and 383 patients remained at home without medical care. Of a total of 1,441 patients (90 per cent.) who remained in their homes during their entire sickness 31, or 2 per cent., secured resident trained nursing service; fifty-three, or about 4 per cent., had visiting trained nursing service; seventy-seven, or 5 per cent., were cared for by resident untrained nurses and twelve, or less than 1 per cent., by a visiting untrained nurse. In thirty-two homes (2 per cent.) resident domestic help was secured and in one home visiting domestic help. In 852 instances (59 per cent.), some member of the family did whatever nursing was done.

According to the judgment of the investigators, only 55 per cent. of the 1,441 patients who remained in their homes throughout their sickness were cared for adequately; 44 per cent. received inadequate care. Only 80 per cent. of the hospital patients were cared for adequately, 20 per cent. were cared for inadequately, chiefly, it is said, because of the lack of social service and follow-up work. In many cases patients returned to homes unprepared for them and proper convalescence was therefore impossible.

Combining home and hospital care 57.5 per cent. of the patients were cared for adequately and 42.5 per cent. inadequately. It was found that on account of lack of proper facilities of 506 patients who could have paid for any necessary service 81 per cent. were cared for adequately and 19 per cent. inadequately. 212 patients could not pay for medical or nursing service. Of these, 32 per cent. received adequate care and 68 per cent. inadequate care. It is said that in nearly 79 per cent. of the cases in which there was a lack of proper service poverty was not a controlling cause. There were in most cases no facilities for service to be had and in other cases there was lack of proper knowledge as to what service to seek and how to get it. Many other interesting facts were developed relative to this group of cases, which it is believed represent a fair average of conditions in like communities.

Dutchess County, it is said, is in rather better condition with respect to facilities for taking care of the sick than many others and the figures emphasize the great necessity for improvement in these respects.

It is believed that the first thing necessary is to secure the cooperation of all existing agencies by organization into what the committee believes might properly take the form of a county health association. This might at first be a private organization or might even remain so permanently, although from time to time many of its activities might be taken over by public agencies, as has happened in many instances.

In order to secure any results, it is said, the sympathetic interest and cooperation of the physicians of the county must underlie all work. To carry out the scheme proposed in the report of the committee would be a monumental undertaking at this stage of public opinion and education, and would require a large expenditure. The cost of securing the kind of service which the committee believes should be provided is not touched on in the report.

Mental Prophylaxis and Aftercare

One of the facts which emphasize the need for mental prophylaxis and aftercare of the insane is the large number of readmissions in hospitals for the insane. According to the government report "Insane and Feeble-Minded in Institutions, 1910" 23 per cent. of the 60,769 patients admitted to institutions for the insane in this country during 1910 had previously been in hospitals for the insane. As Dr. E. F. Leonard suggests in the *Institution Quarterly*, when the patient is discharged from hospital he usually returns to the environment in which his mental disease developed and which perhaps aided in producing the disease. He has lost confidence in himself, is sensitive and feels doubly the suspicion and distrust which probably greet him as a discharged inmate of an insane hospital. Everything favors a relapse. The need for aftercare and of a friendly sympathetic oversight of such patients is evident.

As illustrating one phase of such aftercare, the same number of the *Institution Quarterly* prints an extract from the report of the Illinois Mental Hygiene Society, which has opened an industrial center in Chicago where work is to be given to convalescent mental patients. Here patients are taught handicraft, their products are placed on sale for their benefit. Some patients have been rendered partially, others wholly self-supporting. It is recorded of two patients that their whole attitude toward society changed because of the friendly interest shown in them, others have been improved in greater or less degree.

In most of the states in this country such work for the prevention of mental breakdown is either entirely neglected or left to private agencies. Several European countries, however, have a system of aftercare. In this country New York, Massachusetts, New Jersey, Rhode Island and Michigan are reported as doing some systematic work of this character. The *Institution Quarterly* also contains the plan of Dr. H. J. Smith of the Chicago State Hospital for an aftercare department to be maintained in connection with the state hospitals.

Medicolegal

Law and Evidence Applicable to Fracture Case

(*Dunman vs. Raney (Ark.) 176 S. W. R. 339*)

The Supreme Court of Arkansas affirms a judgment for $500, which plaintiff Raney obtained against defendant Dunman for alleged malpractice in the treatment of a broken leg. The court says that the injuries complained of were that the defendant, after setting the leg, so negligently and unskilfully treated and cared for it that it could not heal, but on the contrary became inflamed and diseased and the bones became dead so that the flesh did not adhere to them and the leg became so twisted, shortened, deformed, and diseased as to necessitate its amputation. The jury were instructed that, if the defendant failed to use reasonable care and diligence either in the diagnosis, treatment or the giving of instructions to the plaintiff or his attendants and such failure resulted in the injuries to the plaintiff's leg, or any of them, of which he complained, without the fault of the plaintiff, it would be the duty of the jury to find for the plaintiff, and to assess his damages at such sum as in the opinion of the jury, taking into consideration all the evidence in the case, would justly, fairly, and reasonably compensate him for such injury or injuries. Taking the instruction in connection with the allegations of the complaint, it could not have misled the jury, and it was not abstract so far as furnishing the jury a guide by which to determine whether or not the injuries of which the plaintiff complained, or any of them, were caused through the defendant's negligence The instruction was no broader than the allegations of the complaint, and the evidence on behalf of the plaintiff which went to the jury without objection warranted the instruction It permitted the jury to find only for those injuries of which the plaintiff did complain that resulted from the defendant's negligence It was the duty of the defendant, if he conceived that the instruction permitted recovery for injuries not set up in the complaint, to call the court's attention to same by a specific request The contention that the instruction was erroneous because it did not correctly define the elements constituting the measure of damages would have been well taken if this had been the only instruction on the subject But a second instruction told the jury that they might take into consideration the plaintiff's loss of time, if any, resulting from the defendant's negligence, the plaintiff's loss of earning power, if any, the bodily pain and suffering which he had been compelled to endure, and mental anguish, if any, which had resulted from such negligence, and any future suffering or inconvenience which he must suffer by reason of such negligence, if any The two instructions supplemented each other, and taken together, were a complete and accurate statement of the law A physician or surgeon is not required to exercise the highest skill possible He is bound only to possess and to exercise that degree of skill and learning ordinarily possessed and exercised by members of his profession in good standing, practicing in the same line and in the same general neighborhood or in similar localities He must use reasonable care in the exercise of his skill and learning, and act according to his best judgment in the treatment of his patients Nor was there error in a refusal to strike out the plaintiff's testimony that his leg got dislocated about a certain date That was not exclusively a matter of expert or scientific knowledge. The plaintiff was competent to testify as to whether his limb was dislocated and out of shape after it had been set Ordinary observation would discover whether a limb that had been properly set had been dislocated, especially where such dislocation was so marked as to cause the foot to be twisted and the limb to be in an abnormal position Moreover, the plaintiff, who was enduring the pain and experiencing the ill effects from the broken limb, was certainly competent to testify that the leg, after being set, had become dislocated

Sufficient Evidence of Fraudulent Diagnosis and Violation of Federal Law

(United States vs Smith (U S), 222 Fed R 165)

The United States District Court for the Eastern District of Pennsylvania, in denying the defendant's motion for a new trial after he had been convicted of using the mails to defraud, says that the charge as presented in the indictment was a scheme or artifice to defraud within the meaning and the language of the acts of Congress on the subject The scheme or artifice laid at the door of the defendant by the indictment consisted in representing to intended dupes that he was a physician professionally equipped and specially trained in the diagnosis and treatment of certain diseases and ailments This, of course, was for the purpose of inspiring them with confidence in him and trust in his judgment of their condition The scheme further contemplated that the persons thus approached should be invited to submit statements of symptoms to the defendant, and that, irrespective of what the symptoms indicated, whether health or disease, the defendant would dupe the patients into the belief that they were the victims of serious ailments and in dire need of medical attention, when in point of fact they were in normal health, and thus fraudulently induce them to part with their money for the defendant's benefit It was enough if so much of the charge was proved as constituted an offense against the law, and the offense for the commission of which the defendant stood indicted If the case involved, as counsel for the defendant assumed, nothing more than a difference of diagnosis, or of opinion as to the proper diagnosis, the position would be well taken that a mere difference of opinion offered no evidence in itself of any insincerity in any one of the opinions The case presented against the defendant, however, was more than a difference of opinion He was a physician When the defense, as well as the case for the United States, was under the consideration of the jury, there was evidence of competency and experience as a medical practitioner Moreover, whether there was knowledge or ignorance on the part of the defendant, the real question was the same The evidence for the United States was full, and indeed unanswerable, that the symptoms which the defendant represented to his prospective patients as alarming evidence of disease were in fact no symptoms of disease at all, but of normal health In point of fact, the symptoms set forth were the recognized symptoms of perfect health This afforded the basis for the judgment of the jury as to whether or not, under all the evidence, the diagnosis made by the defendant was a fraudulent one A finding of guilt was consistent with the view that, without knowledge of whether the symptoms were those of health or disease, the defendant, with the intent of fraudulent deception, meant to frighten the supposed patient into parting with his money The finding was likewise consistent with the view that the defendant, being a physician, with a like purpose pretended the symptoms to be those of disease, when he knew them to be indicative of health

Alcoholic Insanity as a Defense to Crime

(Cheadle vs State (Okla), 149 Pac R 919)

The Criminal Court of Appeals of Oklahoma holds that, in a prosecution for murder, alcoholic insanity, or mental incapacity produced by voluntary intoxication existing only temporarily at the time of the homicide, is no justification or excuse therefor Drunkenness is one thing, and the disease of the mind to which drunkenness leads is a different thing Temporary insanity, occasioned immediately by drunkenness, does not destroy responsibility for crime, where the defendant, when sane and responsible, voluntarily makes himself drunk To constitute insanity, caused by intoxication, a defense in a trial for murder, it must be insanity caused by chronic alcoholism, and not a mere temporary mental condition

The distinction between a fit of drunken frenzy or madness, commonly called "delirium tremens," and temporary delusional insanity, a disease caused by excessive and long-continued indulgence in alcoholic liquors, technically called "delirium tremens" or "mania a potu," is well defined by the authorities and text-writers The principle is everywhere recognized that voluntary intoxication is no justification or excuse for crime, and is no excuse for homicide, though carried to the extent of producing incapacity to control the mind and will However, while intoxication does not excuse homicide, it may produce a state of mind in which one is incapable of forming a design to take life, but evidence of intoxication is admissible only as bearing on the existence or nonexistence of malice

Insanity, though superinduced by excessive and long-continued indulgence in alcoholic liquors, and known as "delirium tremens" or "mania a potu," renders a person so afflicted irresponsible for his acts, if it be of such a character as to deprive him of the mental capacity to distinguish between right and wrong, as applied to the particular act, whether he be under the influence of liquor at the time of the commission of the act or not, but, to do so, his affliction must be settled or fixed insanity, not a mere fit of drunkenness A person, not previously laboring under such a disease or affliction, who voluntarily becomes intoxicated to such an extent or for such a period of time as to cause unconsciousness, of his acts, is not irresponsible under the law for the acts done by him while in such mental condition

A person who commits a homicide while so drunk as to be incapable of forming a premeditated design to kill, if he had formed no purpose to commit the crime prior to the time he became so intoxicated, is not guilty of murder, but is guilty of manslaughter in the first degree

Society Proceedings

COMING MEETINGS

American Association of Anatomists Chicago Dec 27 29
American Physiological Society, Boston, Dec. 27 30
Society of American Bacteriologists, Urbana Ill Dec. 28 30
Southern Surgical and Gynecological Association Cincinnati Dec. 14 16
Western Surgical Association, Des Moines Iowa Dec 17 18

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

Forty First Annual Meeting held at Lexington Ky Oct 19 21 1915

The President, DR. HUGH CABOT Boston, in the Chair

Arteriosclerosis of Uterine Vessels

DR JOHN W PRICE, Louisville Ky A microscopic study of specimens I removed suggested that the hemorrhages were the result of rupture or sclerosed arterioles in the submucosa Some areas beneath the submucosa contain recent hemorrhages undergoing fibrosis other areas appear to be old hemorrhages which have undergone fibrosis and in other places outside the vessels is evidence of repair The patient had a single profuse hemorrhage three years before operation and had no unusual bleeding during the following two years The history of the case the character of the hemorrhages and the appearance of the patient are the greatest aid in making the diagnosis in the absence of a palpable tumor In cases in which there is any doubt as to whether there is present a cancer of the body of the uterus. I suggest the use of the curet or hysterectomy In cases in which the bleeding has been serious no time should be lost in curetting —the uterus should be removed as quickly as possible and if found to be malignant, a more radical operation can be performed at once All my cases except the last one had been treated previously by so-called conservative methods A continuance of a palliative treatment for too long a time subjects the patient to unnecessary danger, and if the patient is suffering with a malignant condition, much valuable time is lost.

DISCUSSION

DR. CHANNING W BARRETT Chicago The uterus is an organ unlike other organs in that it has a physiologic hemorrhage, and any departure from that regular bleeding may be just a little change from the normal and the cause may be very slight In weighing the different causes of hemorrhage we must recognize that there is a material resistance to treatment owing to a change in the blood vessels themselves Often coming on at about the menopause, we must remember that the uterus is a senile organ at that time. Instead of deciding that the uterus should come out if it is malignant, and ought to remain if it is not malignant we should bear in mind that many of these uteri have to be removed at that time

DR. THOMAS J WATKINS, Chicago As a remedy for temporary use in these cases, I would suggest an old but very efficient one, which consists in packing the uterus with gauze saturated with iron, Monsell's solution or the tincture It is the only packing that can be left for a long time without becoming offensive. It can be left for a week without disturbing conditions or developing odors

Kidney Lesions Diagnosed with the Aid of the Cystoscope and Roentgen Ray

DR. COURTNEY W SHROPSHIRE and **DR. CHARLES WATTERSON**, Birmingham Ala The cystoscopic examination and functional test together with careful urinalysis is by far the most important Next comes the roentgenographic examination and then the physical findings and the patient's history We place little faith on shadows said to be within the kidney or ureter unless they are shown positively to be within one of these structures by means of the shadow catheter, pelvic injection or the stereoscopic plate. Pelvic injection is one of the most valuable means for diagnosing lesions of the kidney It is the duty of the cystoscopist to insist on those procedures which are safe and painless when properly performed before having numerous roentgenograms made which are worthless even though the suspicious shadows are shown

DISCUSSION

DR. BRANSFORD LEWIS, St. Louis The general practitioner should familiarize himself with the cystoscope and the urethroscope because the proper application of these instruments will enable him to make a correct diagnosis I have known a number of patients who have gone on for many years suffering because they were told by general practitioners that their trouble was practically incurable yet their condition could have been relieved promptly by simple operative measures

DR. F M BUCKMASTER Effingham Ill I recall the case of a woman who was operated on three times before the cause of her trouble was ascertained She was about 30 years of age and complained of recurrent attacks of pain slightly continuous between times along the lower end of the ureter in the appendiceal region She also complained of attacks of cystitis There was more or less urinary disturbance all the time especially severe at times The abdomen was opened and the appendix removed without relieving her symptoms A year later the symptoms continuing, the same surgeon opened the abdomen again and removed a tube and ovary on that side The cystitis and attacks continued Three years after the first operation the symptoms not only continued but became worse and at that time pus cells and blood cells were found in the urine and the cystitis was quite severe a large part of the time On investigation a stone was found in the lower end of the left ureter This stone was removed and the woman recovered

DR. LEON SOLOMON Louisville The Roentgen ray may or may not disclose the nature of the trouble and I feel that sometimes it has been the cause of surgery that is difficult and might have been avoided I have in mind a piece of surgery which was proposed by a careful diagnostician himself an internist in which the positive finding of the operation was that of a stone in the ureter It was demonstrated in advance of the operation by the catheter in situ that the shadows were phleboliths

Limitations of High Frequency Treatment of Papilloma of the Bladder

DR. H G HAMER Indianapolis Applications of the high frequency current in cases of carcinoma showed some hemostatic effect and slight reduction in the size of tumor or on the other hand marked reduction in size to be followed by rapid growth uncontrolled by burning In one case it seemed to cause more rapid extention High frequency cauterization is an important addition to our means of attacking vesical papillomas of the noninfiltrating type All benign papillomas should be treated primarily with the high frequency current in view of the high percentage of recurrences following open operation (50 per cent.) and the high mortality (10 per cent.) In cases in which suprapubic operations have been done recurrences should be looked for and if present treated by fulguration on their first appearance In dealing with papilloma involving the vesical orifice and prostatic urethra perineal cystotomy with removal of as much of the tumor as possible and application of the high frequency current to the remaining growth seems a rational procedure

DISCUSSION

DR JOHN R. CAULK St. Louis The general practitioner should consider any bleeding from the urinary tract as serious, particularly a symptomless hematuria and not stamp these hemorrhages as due to a congested bladder neck, and various other things that are so commonly ascribed as causative factors in these cases The general surgeon has yet to be convinced of the importance of the cystoscope in almost all cases of prostatic hypertrophy before operation Patients should be subjected to cystoscopy because of the fact that tumors quite frequently are back of prostatic obstructions, and many of the untoward results following perineal prostatectomy seem to be due to leaving behind a tumor which is back of the obstruction I have seen four such cases

Caudal Anesthesia for Prostatectomy and Other Genito-Urinary Surgery

Dr Bransford Lewis, St Louis This method of anesthesia was used in seventy-seven cases with gratifying results The method is far preferable to the other methods

DISCUSSION

Dr Charles E Barnett, Fort Wayne, Ind I think the mortality of prostatectomy is due more to general anesthesia than any other one thing, on account of the deficiency of the kidneys in these cases, and the sooner we can get away from general anesthesia the less the mortality will be following prostatectomy, no matter what route we adopt in removing the prostate

Dr John W Deal, Springfield, Ill In speaking of the high mortality, I should like to ask whether reference is made to gas followed by ether or gas with the occasional administration of ether

Dr Richard A Barr, Nashville, Tenn Three years ago Dr Brown of Nashville noticed an account of this method of anesthesia in a German medical journal, and he immediately adopted its use It has been quite generally used in our city since then by a number of surgeons doing rectal work I have done a little rectal work and a few perineorrhaphies by the method, and have found it entirely satisfactory

Dr Filipp Kreissl, Chicago The methods of local anesthesia for operations on the pelvis, bladder and prostate are intraspinal, epidural or sacral, and parasacral The dangers of injecting the epidural canal with novocain or cocain, or the dangers of nerve blocking with novocain, are grossly exaggerated If one will keep well within established and safe limits of this drug not using more than a definite quantity of a certain concentration, there is absolutely no danger

Dr Stanley G Zinke, Richmond, Ky As to caudal anesthesia, the sacral canal is a cavity or sac, and we require from 30 to 90 c c of the agent we use before we get the anesthetic effect Why? Because the capacity of these little sacs differ The anesthesia is due entirely to pressure and not at all to the novocain present, 0 5 per cent It makes no difference what quantity is injected, it is the pressure that does the work.

When Is a Prostatic Fit for Operative Procedure?

Dr Charles E Barnett, Fort Wayne, Ind After the maximum benefit from thorough preoperative treatment finds the patient below par in fitness for operative procedure, the question of the anesthetic given should be the most considered The less the fitness, the less the general anesthetic Local anesthesia when possible, and to the greatest degree when not possible is the one to be chosen

DISCUSSION

Dr Ben Morgan, Chicago Local anesthesia in surgical operations on the prostate should come first in conjunction with a general but mild anesthetic, and what general anesthetic should be preferred? Chloroform? No Ether? Doubtful Nitrous oxid? Yes

Dr W D Haines, Cincinnati The surgeon's duty, especially in this type of cases, is to save life, not time The preoperative management of cases of prostatic disease is infinitely more important than what the surgeon is going to do at the operating table It *is not* hard to take out the prostate, almost any general surgeon can do it, but the experienced man who has handled many cases will have a high mortality if he does not heed well the warning given us

Dr J B Taulbee, Lexington, Ky I am favorably impressed with nitrous oxid as an anesthetic My experience with ether in doing prostatectomy has convinced me that in these cases in old men, in whom the system is run down, it is better to forego the operation than to risk a general anesthetic as ordinarily given, whether it is ether or chloroform The safest method is to do a two-stage operation under local anesthesia

Autogenous Vaccines in the Treatment of Bronchitis and Asthma

Dr Robert H Babcock, Chicago Autogenous vaccines prepared from the sputa have yielded such results in three cases of acute bronchitis, one of chronic bronchitis, and four of chronic bronchitis associated with attacks of spasmodic asthma as to warrant recommending this mode of therapy as against the old time use of expectorants by mouth In bronchitis independent of asthma, the organisms have been mainly *Bacillus mucosus*, the *Diplococcus mucosus*, the *Micrococcus catarrhalis* and an influenzalike bacillus, while in cases of bronchial asthma an anaerobic fusiform bacillus has been added Asthma has yielded to this vaccine treatment only when this anaerobic fusiform bacillus has been largely present in the vaccine Great care should be exercised in the use of vaccines that the dosage be not so large or so often given as to cause reaction, since this reaction, whether general or local, indicates a negative phase and aggravates the patient's condition The main drawback to the use of autogenous vaccines is the necessity of perhaps several cultures, and the preparation of new vaccines should the cultures show that some of the germs found originally have disappeared or become subordinate in number to others New vaccines should be prepared whenever the condition of the patient seems to have come to a standstill.

DISCUSSION

Dr Leon Solomon, Louisville, Ky My experience with vaccines includes not only autogenous vaccines but also the so-called stock vaccines Their employment in properly selected cases is fraught with as many and as positive results as those obtained from the use of autogenous vaccines The fusiform bacilli have been absent in every case under my observation as well as that of a competent bacteriologist in a thoroughly equipped laboratory

Dr R H Babcock, Chicago One reason the fusiform bacilli are not more frequently obtained in culture is that this bacillus grows very slowly My laboratory reports show that frequently after all other bacilli have put in an appearance the anaerobic bacilli will fail to become manifest until after the third and sometimes the fourth day In cases of bronchial asthma, when an alveolar abscess is present in any given case, the cultures in that case will show two organisms, the *Streptococcus mucosus* and the anaerobic fusiform bacillus I am not prepared to say that this is the organism which is responsible for the asthma, nevertheless it has been a striking experience in every one of my cases of alveolar abscess that, with one exception, a fusiform bacillus has been cultivated when the procedure has been allowed to extend over a sufficient length of time

Typhus Fever

Dr. Richard P Strong, Boston The epidemic of this disease which recently raged in Serbia was the most severe one which has occurred in modern times A few cases of typhus had occurred in Serbia in October, 1914, but the disease did not make its appearance in epidemic form until January, 1915, and then in the northwestern part of the country, among the Austrian prisoners, who were greatly crowded and who necessarily were compelled to live under very insanitary conditions The disease quickly spread from them to other individuals, and as the infected patients and the districts in which they were situated were not quarantined, and the Austrian prisoners and infected individuals were sent or allowed to go to various parts of the country, Serbia was soon afflicted with a terrible and widespread epidemic. The country, weakened by war, was not prepared for an epidemic, and for a time one might say that the typhus raged almost at will The majority of the small number of Serbian doctors sooner or later became afflicted with the disease Those who remained well were occupied with treating the sick and also the wounded from the battlefields, and methods for prevention were impracticable or were not undertaken Wounded soldiers, or those afflicted with minor ailments or diseases with relapsing fever, wandered into the hospitals at will and entered the wards filled with cases of typhus, sometimes occupying the same bed, for it was not unusual for two or even three patients to be found lying in the same bed, and the available floor space was also filled with patients with no beds The epidemic increased through January rose more rapidly in February and March and reached its height in April when the number of cases was in the neighborhood of 9 000 a day Through the combined efforts of all the outside volunteer workers and with the cooperation of the Serbian physicians and officials, the epidemic rapidly declined and for the last three weeks before my departure from Serbia we could not find a fresh case of typhus The sanitary condition of the army and the people was then excellent I trust that the sanitary demonstrations in the prevention of typhus which have been given the Serbian people and the construction of the various disinfecting plants throughout the country will prevent the occurrence of another epidemic of typhus such as we have just witnessed and which destroyed in the neighborhood of 150 000 people. All of the Serbian hospitals had been thoroughly disinfected before I left that country and are ready for the reception of the wounded

Gastric and Duodenal Ulcer from the Standpoint of the Internist

Dr. W F Boggess Louisville Ky I would urge that the internist be more careful and painstaking in his examination of the various digestive disturbances that come to him, to fit himself to recognize these conditions in their earlier stages and to urge on him the fact that there is a medical side to the question and that if the majority of these patients go to the surgeon it is a reflection on the internist s diagnostic as well as therapeutic acumen When do these cases cease to be medical and become surgical? No time limit can be stated Each case is an individual one When all medical means have been intelligently tried and one is threatened with a condition of chronic invalidism then call a surgeon with the assurance that he can and will restore the patient to a fair, if not perfect condition of health and happiness

(To be continued)

MEDICAL ASSOCIATION OF THE SOUTHWEST

Tenth Annual Meeting held at Oklahoma City Oct 12 13 1915

(Concluded from page 1845)

Management of Pellagra

Dr. W T Wilson Navasota, Texas A valuable test of pellagra in case of doubt is to expose the bare arms to the sun for an hour for two or three days and if the person is a pellagrin the characteristic eruption usually appears In acute pellagra or in pellagra of recent origin picric acid is of value internally and as a gargle In severe cases or those with malarial symptoms quinin hypodermically should be used first the picric acid following In the chronic forms, picric acid and sodium cacodylate may be alternated or given at the same time, and also some sodium bicarbonate at intervals

An Outline of the Progress of Prostatic Surgery

Dr. Clarence Capell, Kansas City, Mo There has been progress in prostatic surgery The mortality has been reduced from about 15 to about 7 per cent This progress has been along several lines In the first place we have a better knowledge of the anatomy and mechanics of the condition We know now that in only about 90 per cent. of the cases is there present a true hypertrophy of the prostate There may be a fibrous bar across the floor of the bladder near its outlet, or there may be a fibrous infiltration entirely surrounding the internal meatus The word "prostatism" is the better word to designate the condition Another advancement is the more thorough preliminary examination and investigation of the cases I should like to emphasize the value of the cystoscope and functional kidney tests When the kidney function is low the mortality is high, and when the kidney function is high the mortality is low Another advancement is in the improvement in the operative technic. The suprapubic is fast becoming the more popular route, as it enables the operation to be done more easily There is less likelihood of doing injury to the rectum and other structures There is less likelihood of its resulting in lack of urinary control or of there being a permanent urinary fistula It is true that the mortality is a little higher, but the results are so much better that if there are no special indications for the perineal operation, the suprapubic should be the route of choice

DISCUSSION

Dr. A B Small, Dallas, Texas My experience in doing prostatectomy is that the suprapubic route is much preferable to the perineal, and if I were doing this work now I should do it under caudal anesthesia

Dr. John A Walker, Shawnee, Okla It is essential to get patients on whom we are to do a prostatectomy in the best possible condition before the operation In the old men with enlarged prostates in whom the catheter has been used from three to ten years the walls of the bladder are enormously enlarged, thickened, congested and stretched out of shape and out of the normal relations that they ought to have The operation should be done in two stages, first opening the bladder suprapubically and inserting a large drainage tube, and then later enucleating the gland

Dr J M Cooper Enid Okla It has been my observation that when a patient has been accustomed to the use of the catheter for a number of years, the suprapubic route is preferable The urethra is more or less infected, there is a large amount of congestion and in some cases the walls of the urethra will be hardened and in such cases you will not get the urethra to heal readily after the operation

Dr. F H Clark El Reno, Okla I have always resorted to the perineal route in removing the prostate, and have not had any difficulty in doing so I think we obviate the two stage operation by so doing

Dr. J E Gilcreest Gainesville, Texas We should get these patients in readiness for operation and try to get the bladder thoroughly drained suprapubically before removing the prostate I did a suprapubic prostatectomy in one case, but in the last twelve years I have done nothing but the perineal operation

Dr. T M Sanger, Oklahoma City In nine tenths of these bladder cases, the operation should be performed at one sitting I have learned from experience that if free drainage of the bladder is kept up, there will be very little trouble from infection In one case, before operation the patient was passing stones because there was so much sediment in the urine but as long as I kept the drainage tract open there were no further infection, no fever, and no trouble.

Catarrhal Deafness, with Special Reference to a New Method of Treatment

Dr. W E. Dixon, Oklahoma City After recovery from all throat and nose operations, and especially secretions in the nasopharynx, I pass an applicator wound with cotton which has been dipped in a 5 per cent. solution of cocain and epinephrin in one tube and immediately follow this by another dipped in a 1 or 2 per cent. solution of silver nitrate The next day the other tube is treated in a like manner This mode of treatment is continued until the hearing is improved or until the tubes are patent. I have treated each tube every day but better results are obtained perhaps, by not treating so often It may be better, after the first week or two of treatment, to treat each tube only twice a week then once a week. Finally the patient will tell you that the air passes freely at which time it is best to lengthen the interim between treatments

Treatment of Nevus

Dr. J L. McDermott, Kansas City, Mo Treatment should be instituted as soon after birth as the strength and health of the baby will permit, especially in those nevi which manifest a tendency to grow If properly treated, the growth will be checked at once and its complete removal will be facilitated As to the method of treatment, that will depend on the age of the patient, the location of growth the size and character of the growth and the ability of the doctor to keep his patient under observation and control for the necessary time to complete the treatment In recent years the use of Roentgen and radium therapy has grown in popularity in the treatment of nevus Both agents have a specific and selective action on the endothelial cells of the vessel walls, and produce an endarteritis followed by a fibrosis Successive treatment causes the fibrous tissue to undergo contraction, and the vessels are largely obliterated How perfect the results of the treatment are will depend on the operator's ability to destroy the subcutaneous vessels, and at the same time preserve the surface epithelium In papillary angiomas and small localized nevi, excellent results may be secured with carbon dioxid snow Even in cavernous angiomas in which spontaneous hemorrhages have occurred, the snow may be used without danger of hemorrhage following the treatment In the application of snow, caution should be used in the depth of the freezing produced, for, as in any other form of treatment, an ugly scar may result if due care is not used

DISCUSSION

Dr E H Skinner, Kansas City Mo I have not had success with radium in treating port wine marks, but I think all of the work that has been done with radium in lymphangiomas can be duplicated by the Roentgen ray There is a tendency at the present time on the part of people to take advantage of radium which not all of us can afford to keep in our offices, and as long as the same results can be obtained by means of the Roentgen ray, except in cases of port wine marks, it is unnecessary to advise patients that radium is the only treatment

Nervous Disorders Associated with Pelvic Disorders

Dr G H Moody, San Antonio, Texas Any pelvic disease should be corrected, if possible, just as should any disease of any other organ of the body without reference to the question as to whether or not a nervous or mental disorder exists in order to stop its drain on the general health provided in a neurotic individual, when a surgical operation or other heroic treatment is indicated the nervous depression or instability is not so great as to precipitate an acute outbreak as often happens Several cases have come under my observation in which nervous and run-down women have become abruptly insane immediately following an operation, well performed and in good surgical hands A few patients also have been operated on under my observation during an attack of insanity, neurasthenia or hysteria with the results of an intensification of the nervous symptoms, induced by the extra strain and shock made by the operation and anesthetic on an already depressed nervous system I have also seen more or less important operations, made on a diseased pelvic organ in an excited, delirious or maniacal patient, result in marked improvement when the operation was followed by the patient being put to bed and absolute rest enforced The same immediate improvement has also been observed in others, men as well as women, not requiring an operation, when absolute rest and proper care and attention were likewise enforced

DISCUSSION

Dr. G W Robinson, Kansas City, Mo If the pelvic organs are diseased in nervous women, they should be treated just the same as they would be in those who are not nervous The same changes take place in the nerve cells, as the result of constant pain, which occur in cases the result of shock We also get a state of intoxication because in these conditions the body is not able to take care of toxins that normally develop in the system, and naturally we would expect neurologic conditions to develop as the result of pain extending over a long time Especially do we have infections in the pelvis from which we get an absorption of toxic material

Dr S Grover Burnett, Kansas City, Mo I know of no question more difficult to answer than when we shall remove pathologic conditions in the pelvis in a patient who has gone to pieces mentally When there is unmistakable disease in the pelvis that is doing damage to the patient, it should be removed, but there has been too much removal in women for so-called neurotic ovaries Surgery is contraindicated in such cases

Nitrous Oxid-Oxygen Analgesia in Obstetrics

Dr. F K Camp, Oklahoma City The time of labor is materially shortened Perineal lacerations are less frequent In forty-four primiparas to whom gas was given, twenty showed some degree of laceration, or 45 per cent., while with sixteen primiparas without gas, there was some degree of laceration in twelve cases, or 75 per cent In my series of twenty-five cases, all of the babies cried just as early and just as vigorously as those who did not receive the gas, and showed no signs of anesthesia The convalescence in these patients was in every way smoother and quicker than I have ever seen in a corresponding series of cases More patients left the hospital under ten days after delivery, than over twelve Multiparas were generally out of bed on the fifth day, primiparas up in a chair on the sixth or seventh day

DISCUSSION

Dr S J Wolfermann, Fort Smith, Ark I should like to report a fatal case in a member of my own family The patient aged 32, was given nitrous oxid gas in New York by one of the best anesthetists there for the purpose of undergoing an operation for a peritonsillar abscess, and died in a minute and a half from respiratory failure

Diagnosis and Medical Treatment of Gastroduodenitis

Dr F B Erwin, Wellston, Okla The nervous phenomena in these cases are so very prominent that many have at first been diagnosed hysteria, neurasthenia and other nervous diseases They have even been diagnosed as gallstones The patient complains of general weakness, occipital headache, hot flashes, numbness of limbs, nausea with occasional vomiting, disturbance of vision, pain in region of stomach and duodenum, in from one to two hours after eating, belching considerable quantities of gas, palpitation of the heart and many other similar symptoms On physical examination the patient frequently presents a pale, rather sallow, listless expression, the heart action in the incipient stage is usually in fairly good condition, with the exception of being easily irritated, some tenderness in the region of the stomach and duodenum, kidney action increased at the time of attacks of pain, increased acidity of the urine, bowels in the first few months usually constipated, blood pressure slightly lowered, and the superficial reflexes increased considerably and the deep reflexes slightly The treatment of these cases is largely dietetic with a small amount of medicine the first few weeks The medicinal treatment should be so adjusted as to check and change the too acid condition of the stomach and return it to a normal condition A mild alkaline preparation should be given every two or three hours for a few days At the same time strychnin should be given three or four times daily A gentle laxative should be used from every two to four nights No severe purgative should be prescribed at any time, for the reason that it irritates and aggravates this condition Strychnin has an excellent tonic action on the muscular striae of the intestinal wall when given three or four times a day It also has a good tonic effect on the heart The length of time for medicinal treatment will depend on the stage of the disease and the reactive power of the patient The diet should consist largely of carbohydrates and fats so as to place as little work as possible on the stomach and duodenum It should be taken every three or four hours for a time in small quantities Such food as cream butter fat, toasted light bread and like foods are easily digested No fried foods or acid should be allowed at all

Tracheobronchoscopy and Esophagoscopy

Dr D L Shumate, Kansas City, Mo I have done all my work through the mouth, not finding it necessary to do a tracheotomy Under general anesthetic, I use a dorsal position, with the patient's head held off the table by an assistant I have found that the quicker you operate, the better the condition of the patient and the easier to remove the foreign body I have two cases of safety pin in the esophagus, one in a grown woman, the other in a 7-months-old baby A case of a 25-cent piece in the middle third of the esophagus, I failed to find the first time I tried, but got it on second trial

One half-dollar that I saw disappear into the stomach under anesthesia in a 6-year-old boy was passed in the stool five days afterward I saw one peach seed do the same trick except that it passed from the esophagus before the patient had entirely lost consciousness from the anesthetic, but was unable to tell us until afterward Of course I failed to find the seed for it was no longer in the esophagus I have had cases of big buttons little buttons a buttonhook a plum seed pieces of tin and many foreign bodies in the esophagus I have had thirty-odd cases all together and I feel that I have only begun to acquire the skill and knowledge of doing good work. I have had only two deaths

NEW YORK ACADEMY OF MEDICINE

Meeting held Oct 21 1915

The President Dr. Walter B James in the Chair

SYMPOSIUM ON TYPHUS FEVER

The Form of Typhus Fever that Is Endemic in New York and Has Been Called Brill's Disease

Dr. Nathan E. Brill Typhus fever is always the result of conditions which are associated with personal filth, with the segregation of people in confined quarters and with economic conditions which produce squalor and famine, finally, it stands as an index of man's greed of his lust of conquest, of his sociologic inefficiency In short, the disease appears whenever conditions are favorable to the development of vermin, particularly the body louse, with which the disease is now specially associated as an etiologic factor The body louse explains most of the epidemiologic factors of the disease particularly its appearance and its spread Typhus fever has appeared in all countries, particularly in those in which the social conditions are associated with poverty Even America had not been spared in the past, as is evidenced by its occurrence in 1836 1847, 1865 1881 and 1893 With the last two epidemics I have had personal experience in New York. In order to form a proper conception of the disease, it will be necessary to divest the mind of all preconceived notions gained from textbooks and monographs Typhus fever exists in two forms a mild attenuated or endemic form so disguised as to have escaped observation and to have been mistaken by almost everybody for typhoid fever, and the epidemic form which usually begins rather suddenly with a chill or chilly sensations, though it may occasionally be preceded by two or three days of malaise and general body pains Headache rapidly supervenes and fever immediately appears These symptoms ars quickly augmented so that by the second or third day the fever may have reached its fastigium of 104 or 105 F As the disease progresses it is marked by profound toxemia signs of intense blood infection, marked involvement of the nervous system manifested by delirium excitement and tremor and somnolence stupor coma vigil and an unusually severe involvement of the muscular system as well with the tremor and physical exhaustion which were so often manifested Epidemic typhus fever is a disease of the winter months and is highly communicable. Wherein does the endemic or mild form of typhus fever differ from the epidemic typhus fever? The two are alike in their onset, in the first stage of the eruption in the critical decline and both are terminated not followed by relapses In all other respects they differ The eruption in the mild form rarely goes to the hemorrhagic stage, it is always an erythema There is no profound involvement of the nervous system there may be a slight delirium but it is mild in type appearing only at night The patient is never or rarely stuporous never seized by maniacal excitement never goes into coma vigil and has no muscular tremors subsultus or carphology Involuntary discharge of urine and feces has never been seen by me in the mild form of typhus fever In the mild form the headache instead of diminishing about the eighth day as in the epidemic form of the disease becomes progressively more intense even up to the end of the illness The mortality of the mild form is less than 0.25 per cent I have seen only one death in over 400 cases which up to this time have been entered on our records at Mount Sinai Hospital This is a marked contrast to the mortality of 20 per cent in the hospital cases of epidemic typhus fever seen by Murchison and Curschmann The period of the greatest prevalence of the mild form is in the summer months, which is directly opposed to the time of prevalence of the epidemic form In the mild form a little less than 70 per cent of all the cases appear in the months of July, August, September and October There is a decided difference in the communicability of the two forms, the endemic form showing no evidence of being at all communicable It seems to me that the body louse is not an important factor in the communicability of the mild form of this disease, and that some other agent must be looked for to explain the origin and spread of this form It was the epoch-making work of Dr Harry Plotz who isolated the organism of the mild form and of the epidemic form of this disease, which he found to be identical in all respects, which proved that the disease which I described was typhus fever I am thoroughly convinced that the work of Dr Plotz and Dr Peter K Olitsky has established the etiologic factor of typhus fever in its two forms, and that this dread disease is no longer one of unknown origin but is due to the invasion of the body by the *Bacillus typhi exanthematici*

Typhus Fever in Mexico, in England and in This Country

Dr John F Anderson Washington, D C. Typhus fever in England, in Mexico and in the United States, so far as my observations go shows no essential differences, except as regards severity and mortality The disease as it came under my observation in England had a mortality of about 20 per cent. the mortality in America is not over 2 per cent The mortality in Mexico shows considerable variation in different years and among the native and foreign population In 1909 and 1910 the mortality among the patients in the Mexican General Hospital was 10 per cent, while in 1911 and 1912 it was nearer 5 per cent The disease is much more severe among the foreign population than among the natives Of 144 cases of typhus fever treated in the American Hospital in Mexico City from 1888 to 1910, fifty died, a mortality of 34 per cent. Many mild cases escape observation, while the severer cases are seen by a physician, and in this way the mortality rate is increased over the true figure. In the western hemisphere typhus fever occurs in a mild type in practically all the larger cities as far west as Milwaukee and as far south as Atlanta It also occurs in certain portions of Mexico and Central America In Mexico it has been observed that it never prevails below an elevation of five or six thousand feet Even when persons come from a high altitude during the incubation period of the disease and develop the disease after reaching the coast, it does not spread The inability of typhus fever to spread in the lower altitudes of tropical and subtropical countries and its lessened prevalence in summer and fall is attributed to the effect of the higher temperature on the transmitting insect the body louse or *Pediculus vestimenti* Since we know that typhus fever is transmitted by the body louse and know the effect of high temperature on the life of the insect, we can explain the influence of the high temperature on the prevalence of the disease Typhus fever is still endemic and the United States should require American sanitarians to recognize the persistence of the problem and to guard against a disease that may at any time assume epidemic prevalence and virulence All efforts at prevention must be centered on the louse. These should include measures for the destruction of all lice and their eggs the adoption by persons in the vicinity of cases of typhus of measures to prevent the possibility of their being bitten by lice and inoculation with the mild type of the disease of persons entering localities where the disease is present.

Pathogenesis of Typhus Fever

Dr. Peter K. Olitsky The organism of typhus fever is a small gram-positive bacillus which grows only under anaerobic conditions It is found in 100 per cent of the epidemic typhus cases in which cultures were made before the crisis and in 53 per cent of the endemic cases The earlier in the disease the blood culture is taken the more often it is positive The more severe the case, the more numerous are the organisms Antibodies against the organisms are found in the blood of typhus fever patients or in animals in which the disease has been produced experimentally Complement-fixing bodies agglutinins, precipitins and opsonins have also been found These antibodies are usually absent when the fever is present, and are present to a small extent at or shortly after the crisis The greatest concentration is found from five to twelve days after the crisis The crisis is not due to sudden destruction of the bacteria, but rather to the result of the activities of the cells Complement-fixation tests are positive in 71 per cent of the cases after the crisis They are negative when tests are made with the serum of patients suffering from other diseases or with the serum of typhus fever cases tested against other organisms Agglutinins were present in 92 per cent of the cases after the crisis In numerous control cases no agglutinins were found Precipitins were found in 73 per cent of the cases after the crisis In monkeys with experimental typhus fever, antibodies were found the same as in man In guinea-pigs only opsonins were found In cases of endemic typhus the most marked antibody reactions were found in cases with negative blood cultures Antibodies could be produced in a few monkeys by inoculation of the organism, but they were not immune to the virus of typhus fever It was found that blood from typhus fever patients which contained no bacilli or very few was not infective for animals while typhus blood in which the bacilli were more numerous was infective for animals Finally, we have succeeded in finding a febrile reaction like that in typhus fever by injecting a guinea-pig with an emulsion of live typhus bacilli from a case of endemic typhus fever In one guinea-pig the organism was recovered from the blood at the height of the febrile reaction

Discussion on Typhus Fever

Dr G A Friedman Three epidemics of typhus fever came under my observation while I was in active practice in western Russia The disease was constantly endemic and ran a mild course. If an epidemic occurs in a locality in which typhus fever has not recently been present, the cause is an exogenous one In such a community the epidemic spreads more rapidly than in a community in which outbreaks occur at frequent intervals These cases run a more severe course, and the mortality is higher An epidemic breaks out with few exceptions in the fall, reaches its height in February or March, and dies out with the first warm days Somehow there is a tendency for the contagion to remain in endemic form in many regions of the world in an attenuated state From these endemic cases an epidemic may be expected at any time It is impossible to state why the endemic cases do not more frequently lead to epidemics in the overcrowded dwellings of our large cities In endemic regions one sees cases of typhus fever at all seasons of the year, though in the fall and winter the moderately severe cases are more numerous, while in the spring and summer the mild cases predominate As a rule the course of the disease is mild among children even in epidemics

Dr E Libman Dr Brill did not mention two cases of endemic typhus fever in which he made necropsies and found the bone marrow of the femur red This feature was first noticed by Dr Welch, who has expressed the view that possibly the organisms multiply in the bone marrow The suspicions that have been expressed that the organism of Dr Plotz may be a secondary invader can easily be dismissed We know of no disease that has a constant secondary invader The organism described by Drs Plotz, Baehr and Olitsky was found regularly in the blood of epidemic typhus fever cases and in half the cases of endemic typhus fever The organisms from the epidemic cases were found to be virulent, those from the endemic cases were not. I should like to call attention to the part of the work done by Dr Olitsky in which he finds in the endemic cases of typhus fever the most marked complement-fixation and agglutination reactions in the twenty cases that had negative blood cultures Cultures were made in most of those cases within five days before the crisis As the organism was not in the blood at the time, it is evident that it was either in the blood before that time or was in the organs, otherwise reactions would not have been obtained against the organism This is definite proof that the organism cannot be considered a secondary invader I have just received a letter from Dr Baehr in which he states that the blood cultures in the very first two cases of typhus fever which he and Dr Plotz studied in Belgrade showed the typhus bacillus The blood culture from the first case was taken on the fifth day and showed a larger number of organisms than that of any case so far studied This is an additional proof that the bacteremia is more marked early than late Probably the investigators who have been studying typhus fever in Serbia did not find the organism in any number of cases because the serum which they used was not favorable to the growth of the organism As to immunization, it seems to me that it would be best before adopting the method suggested by Anderson, namely, injecting a patient with the virus of the disease, to try the injection of dead bacilli, then of sensitized living bacilli, and, finally, if it should be found necessary, small numbers of live bacilli from the endemic cases, these bacilli not being virulent The experiments of Dr Anderson are interesting, but it must be noted that his inoculations were all made intraperitoneally Apart from that, the organisms used by Dr Anderson were not virulent, and again, from the results of immunity experiments on animals one can draw no binding conclusions as regards the efficiency of vaccination in human beings Our best course will be to take the advice of Leishmann in connection with typhoid fever, to make a careful study in human beings

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9 Therapeutic and Economic Value of Diversional Occupation B D Evans and F M Mikels, Morris Plains, N J
10 Voice in Tabes—Voice Sign W B Swift, Boston
11 Treatment of Paresis and Tabes Dorsalis by Salvarsanized Serum (To be continued) H A Cotton, Trenton, N J

American Journal of Medical Sciences, Philadelphia

November, CL No 5, pp 625 780

12 *Roentgen Diagnosis of Gastric Cancer, Report of Twelve Cases R D Carman, Rochester Minn
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19 *Friedländer Bacillus Pneumonia, Report of Cases. W R. Sisson and C B Thompson, Boston
20 *Elimination of Acetone and Diacetic Acid in Two Hundred and Fourteen Surgical Cases M R Bradner and S P Reimann, Philadelphia
21 Luetic Arthropathies W H Higgins, Richmond, Va

12 **Roentgen Diagnosis of Gastric Cancer**—The records of the Mayo clinic according to Carman show that in a large series of cases confirmed by operation, 67 per cent of the patients had palpable tumors and 53 3 per cent. had food remnants In other words 33 per cent had no palpable tumors and 46 7 per cent had no food remnants to indicate obstruction It is precisely in those cases says Carman which show neither tumor nor food remnants that the Roentgen rays have their greatest field of usefulness and superiority It is no longer necessary to wait until the tumor is palpable or until evidences of marked obstruction exist He does not say that the clinical data should be discarded On the contrary, the roentgenologist should in every instance be acquainted with the clinical facts If suggestive of cancer they will stimulate him to a more exhaustive search If negative they will exercise a wholesome restraint on his interpretation of the reflex phenomena so often produced by conditions outside the stomach More important still the final diagnosis should be compatible with all the findings if possible and occasionally only their correlation will make the diagnosis A combination of all methods forms a net through which few cancers will escape

The roentgenologic manifestations of gastric cancer include departures from the normal contour pyloric action peristalsis motility, flexibility mobility position and size of the stomach Enumerated in the order of their relative importance these signs are 1 Filling defects 2 Alterations of pyloric function (*a*) gaping of the pylorus, (*b*) obstruction of the pylorus 3 Perversion of peristalsis (*a*) absence of peristalsis from involved areas, (*b*) weak peristalsis, (*c*) antiperistalsis, (*d*) exaggerated peristalsis, (*e*) irregular peristalsis 4 Altered motility (*a*) rapid and early emptying (nonobstructive cases) (*b*) delayed emptying (obstructive cases) 5 Lessened flexibility 6 Lessened mobility 7 Diminished size (capacity) 8 Displacement Roentgenologic determination of the absence or presence of obstruction its site and degree aids materially in judging the advisability of palliative surgery and in selecting the operation, whether gastro-enterostomy or gastrostomy, or jejunostomy In expressing any opinion as to operability unless the cardia or upper media is definitely implicated or unless the growth is extraordinarily extensive, the roentgenologist should be chary of saying that a case is inoperable, as he may thus deprive the patient of relief or cure at the hands of the surgeon In the majority of instances exploration alone is the final word and the patient should be given the benefit of the doubt.

14 **Nephritis**—The authors summarize the results of their extensive study as follows A. Test renal meals in relation to renal function 1 Of two general methods used the v Monakow standard diet with days of added salt or urea and the Hedinger and Schlayer test day on a mixed diet, the first requires about ten days of hospital study and the second three days Using the two methods on a series of patients the authors have obtained similar results by each 2 Though similar the results are not quantitatively identical The same is true for the same test repeated several times on the same patient 3 For the Hedinger and Schlayer test there is no constant normal curve of excretion Normality consists in the ability to vary from period to period the amounts and concentration of the substances quantitated. Abnormality consists in a more or less marked degree of fixation in all of these values from period to period 4 Fixation in excretion of nitrogen seems to develop at a later period in most cases than is true for water and salt.

B Quantitative studies of nonprotein nitrogenous bodies of the blood 1 Urea nitrogen in a series of cases averaged 63 4 per cent. of the total nonprotein nitrogen of the blood and its increase was usually proportionate to the increase of the total nonprotein nitrogen 2 Ammonia nitrogen increased slightly but not proportionately The same held for uric acid and amino acid nitrogen 3 Creatinin showed roughly a proportionate increase. 4 The difference between determined forms of nitrogen and total *nonprotein nitrogen* was greatest in cases with clinically most severe symptoms 5 In the spinal fluid the increase in nitrogen is almost solely in urea nitrogen except in cases of anuria 6 The authors can see no advantage in quantitating the nitrogen of the spinal fluid over quantitating it in the blood 7 No relationship existed between the amount of nonprotein nitrogen in the blood and changes in the retina

C. Diuresis in relation to diuretics 1 Diuresis is relatively infrequent in the average hospital patient 2 Except for diuresis in cardiac cases following digitalis, diuresis bears an inconstant relation to diuretic drugs 3 In cases of nephritis with or without edema and without cardiac decompensation diuretic drugs often fail to produce a striking diuresis Their observations justify a healthy skepticism as to the efficacy of diuretic drugs in cases of nephritis without cardiac decompensation

D Functional tests in relation to anatomic changes in the kidney 1 In eighteen cases of chronic nephritis the patients dying and coming to necropsy, no constant relations have been found between anatomic lesions and renal function in so far as excretion of phenolsulphonephthalein albumin in the urine casts presence or absence of edema, blood-pressure determinations etc are concerned

17 **Gangrene of Lung**—In Head's case the diagnosis of gangrene of the lung was made by plunging a long exploring needle into the area of lung involved and withdrawing about 5 c c of dark-colored fluid having the typical smell of gangrene and containing cellular elements of a peculiar type Without this evidence Head says, the diagnosis of gangrene of the lung could not have been made, since neither the breath of the patient nor the sputum coughed up gave out an odor suggestive to gangrene.

18 **Luetin Reaction in Syphilis**—From the study of the luetin reaction in 200 medical cases presenting themselves fo diagnosis the following conclusions are drawn by Hanes 1 The luetin reaction when positive is absolutely specific The author has not seen a single positive reaction in a case free from symptoms and physical signs of syphilis 2 The reaction is of limited value in other than tertiary cases 3 The luetin reaction is a more delicate test for latent and tertiary syphilis than is the Wassermann reaction 4 Patients suffering with visceral syphilis give positive luetin reactions with great constancy This seems especially true of cardiovascular syphilis The luetin test represents a distinct advance in the diagnosis of syphilis and is a helpful supplement to the Wassermann test in the diagnosis of tertiary syphilitic lesions

19 **Friedlander Bacillus Pneumonia**—The study of four cases leads Sisson and Thompson to conclude that there exists a type of lobar pneumonia, *sui generis*, that is caused by the *Bacillus mucosus capsulatus* Clinically this so-called "Friedländer pneumonia" is subject to great variation The exact diagnosis is difficult to make clinically but is aided by the identification of the Friedländer bacillus, both in the blood and sputum The pathologic findings taken together are usually quite typical for this form of pneumonia

20 **Acetone and Diacetic Acid.**—Bradner and Reimann found that acetone occasionally accompanied by diacetic acid was eliminated in the urine of 182 out of 214 consecutive surgical patients (in 23 3 per cent. before surgical intervention and in 61 7 per cent. after operation, under ether anesthesia) The temperament of the individual and the length of time preoperative treatment (of nothing by mouth and saline by bowel) had been carried out appeared to have a slight positive effect on the acetone eliminated Acetone and diacetic acid were eliminated oftener and in larger quantities in women than in men The fact of surgery alone increased the acid, but the severity of the operation and the amount of obvious shock present had but little bearing on the amount of eliminated acid and the time of elimination

Boston Medical and Surgical Journal

November 11 CLXXIII No 20 pp 723 758

22 Legislation for Insane in Massachusetts with Particular Reference to Voluntary Admission and Temporary Care Laws. F E. *Williams Boston*

23 Report of Harvard University Service at American Ambulance Lycée Pasteur Neuilly Sur Seine France R B Greenough, Boston

epidemic typhus cases in which cultures were made before the crisis and in 53 per cent of the endemic cases The earlier in the disease the blood culture is taken the more often it is positive The more severe the case, the more numerous are the organisms Antibodies against the organisms are found in the blood of typhus fever patients or in animals in which the disease has been produced experimentally Complement-fixing bodies agglutinins, precipitins and opsonins have also been found These antibodies are usually absent when the fever is present, and are present to a small extent at or shortly after the crisis The greatest concentration is found from five to twelve days after the crisis The crisis is not due to sudden destruction of the bacteria, but rather to the result of the activities of the cells Complement-fixation tests are positive in 71 per cent of the cases after the crisis They are negative when tests are made with the serum of patients suffering from other diseases or with the serum of typhus fever cases tested against other organisms Agglutinins were present in 92 per cent of the cases after the crisis In numerous control cases no agglutinins were found Precipitins were found in 73 per cent of the cases after the crisis In monkeys with experimental typhus fever, antibodies were found the same as in man In guinea-pigs only opsonins were found In cases of endemic typhus the most marked antibody reactions were found in cases with negative blood cultures Antibodies could be produced in a few monkeys by inoculation of the organism, but they were not immune to the virus of typhus fever It was found that blood from typhus fever patients which contained no bacilli or very few was not infective for animals while typhus blood in which the bacilli were more numerous was infective for animals Finally, we have succeeded in finding a febrile reaction like that in typhus fever by injecting a guinea-pig with an emulsion of live typhus bacilli from a case of endemic typhus fever In one guinea-pig the organism was recovered from the blood at the height of the febrile reaction

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Journal of Pharmacology and Experimental Therapeutics, Baltimore

November VII No 4 pp 85 555

59 Similarity and Synergy of Morphin and Strychnin Action H McGuigan and E. L. Ross, Chicago
60 Synergism of Morphin and Scopolamins M I Smith Ann Arbor Mich
61 *Action of Cocain M Kuroda London
62 *Blood Flow in Patient with Double Aortic and Double Mitral Disease L. H Newburgh and J H Means Boston
63 Effect of Caffein on Blood Flow in Normal Human Subjects J H Means and L. H Newburgh Boston
64 Apparatus for Perfusion of Isolated Organs A N Richards and C. K. Drinker Philadelphia.
65 Urine Formation by Perfused Kidney Preliminary Experiments on Action of Caffein A N Richards and O H Plant Philadelphia
66 Action of Phenylethylamin on Heart. H G Barbour and E M Frankel New Haven Conn.
67 Response of Surviving Uterus to Morphin and Scopolamin H G Barbour and N H Copenhaver New Haven Conn
68 Action of Caffein and Epinephrin on Vagus Nerve. H G Barbour and S B Kleiner New Haven Conn
69 Morphin and Scopolamin Action on Intact Uterus H G Barbour New Haven Conn

59 **Similarity and Synergy of Morphin.**—From the work recorded by McGuigan and Ross the following conclusions are drawn 1 Morphin when injected intraspinally into mammals (dogs and cats) in adequate doses will produce tetanus after a latent period Codein which is apparently not oxidized in the body will not produce tetanus 2 Morphin when oxidized to a certain degree and injected into the spinal canal of dogs or cats, or into the lymph of frogs, will produce tetanus more quickly than unchanged morphin Artificially oxidized codein will also produce tetanus when injected in this way Oxidized morphin when administered otherwise than directly into the cerebrospinal fluid will not produce convulsions in mammals (dogs) The strychnin-like action of morphin is apparently due to an oxidation product which is first produced and then destroyed in the body Differences in the rate of oxidation will explain the varied reaction in different animals

61 **Action of Cocain.**—Kuroda found that cocain first increases the activity of unstriated muscle and then depresses it whatever be the nature of the sympathetic control In some instances the phase of increased activity was not observed The action of cocain in first stimulating and then paralyzing muscle fiber (including that of the iris) is analogous to its effects on other forms of living matter including that on sensory organs when directly applied to them

62 **Double Aortic and Double Mitral Disease.**—Determinations of the blood flow during rest and in response to increasing amounts of muscular work in a patient with valvular heart disease are reported by Newburgh and Means No essential differences between the cardiac and normal subject were found In both the normal and the cardiac subject the oxygen absorption and the blood flow showed a progressive rise with increasing amounts of work This rise in blood flow was met at first chiefly by an increase in systolic output until a maximum was reached, after that by an increase in pulse rate.

Lancet-Clinic, Cincinnati

November 6 CXIV No 19 pp 407-424

70 Psychoses in Twins P B Newcomb Osawatomie, Kan
71 Acute Middle Ear Inflammations J W Murphy Cincinnati.
72 Medical Results at Tuberculosis Dispensary in 1914 J L. Tuechter Cincinnati.
73 Sarcoma of Upper Jaw Symptomatically Cured by Roentgen Ray S Lange, Cincinnati.
74 Medicine Profession or Trade. H Cabot, Boston.

Maine Medical Association Journal, Portland

October VI No 3 pp 137 168

75 Physician s Long Arm in Preventive Medicine. A. J Torsleff Bango
76 Cancer of Breast. W E. Gray Milltown, Canada.

Medical Record, New York

November 13 LXXXVIII No 20 pp 815-856

77 Rheumatism and Skin. W P Cunningham New York.
78 Iodid of Potassium in Syphilis D W Montgomery, San Francisco
79 Arterial Tension in Connection with Cardiac Murmurs. P E. Tiemann, New York.
80 Traumatic Hysteria Trauma Cause or Occasion? D B Hardenbergh Middletown
81 Etiology of Pellagra B W Page Lumberton, N C.
82 Gastric Symptoms in Tuberculosis L H Levy New Haven Conn
83 Impairment and Loss of Sexual Power in Acromegaly W A Boyd Baltimore
84 Artificial Infant Feeding J Epstein Brooklyn
85 Interesting Obstetric Case I Eckert New York.

Michigan State Medical Society Journal, Grand Rapids

November XIV No 11 pp 555 596

86 Spasmophilic Convulsions in Infancy Their Differentiation and Treatment C C Grulee Chicago
87 Admission of Indigent Patients to University Hospital Ann Arbor Mich R Peterson Ann Arbor
88 Trend of Medicine Fifty Years Ago B R Corbus Grand Rapids
89 Suppurative Ethmoiditis S G Miner Detroit
90 Ureteral Obstruction Report of Unusual Case. F C. Witter, Petoskey
91 Relation of Hysteria to Other Diseases T Klingmann Ann Arbor

90 Abstracted in The Journal, September 25, p 1137

New York Medical Journal

November 13 CII No 20 pp 977 1024

92 Peritonitis J B Deaver and D B Pfeiffer Philadelphia
93 Indigocarmin Test C G Cumston Geneva Switzerland
94 Cancer Treated with Autolysin H S Williams New York.
95 Treatment of Colles Fracture A E. Hoag New York
96 Anesthesia by Rectum in Thyroidectomy W Lathrop Hazleton Pa
97 Case of Primary Carcinoma of Appendix. J Goldstone, New York
98 Clinical Teaching M Schulman New York
99 Suspected Thoracic Aneurysm with Death from Rupture. F C iffith New York
100 Trachoma and Follicular Conjunctivitis. M B Beals, New York.

Ohio State Medical Journal, Columbus

October XI No 10 pp 605-658

101 Analgesics and Anesthetics in Labor Their Indications and Contraindications W Gillespie Cincinnati
102 Pregnancy Complicating Tuberculosis J J Thomas Cleveland
103 *Direct Treatment of Cerebrospinal Syphilis According to Methods of Swift and Ellis C L. Cummer and R Dexter Cleveland.
104 Extraction of Lens as Seen in Some of European Clinics C. C Stuart Cleveland
105 Amebic Bowel Infection in Ohio W H Lewis Newark.

103 **Treatment of Cerebrospinal Syphilis.**—Summarizing their work Cummer and Dexter find that they have given fifty-five intraspinous injections of serum They have had no untoward or unfortunate results in any instance. There have been no deaths paralyses, or bladder disturbances With all patients but two sharp reactions have occurred following the intraspinous injections When any form of crisis or lancinating pain has been present the reaction has usually taken the form of an acute exacerbation of this symptom In some instances the reaction has been of a most aggravated nature. The compensation to the patient however is that the greatest improvement has usually followed with those who have had the most intense reactions and conversely, they have come to expect little or slight betterment in those n whom the reactions were slight or were absent. The lymphocytosis, even when as high as 153 disappears quite promptly after one, two or three injections The globulin test is usually slower to disappear In some instances, it does not clear up until much treatment has been given As to physical findings, practically the only changes the authors have been able to detect have been restoration of sensation, when this had been impaired disappearance or practically disappearance of Romberg s sign increase in muscular strength, and a diminution in ataxia In no instance have they noted pupillary reactions return to normal, nor have absent deep reflexes reappeared

In every instance in which lancinating pains were present they have either disappeared entirely or are so much diminished that the annoyance to the patient is comparatively slight. The striking feature is the improvement in general condition, in weight, strength and well-being In certain instances this is partially attributable to the freedom from pain but in other cases in which pain had not been a feature this general betterment was noted at once. Vesical incontinence in one case has been so much less frequent that it has almost ceased to be an annoyance The sum total in five cases has been a symptomatic improvement so decided that the patients' economic efficiency is restored and they are able to do their work and enjoy life as normal people Concluding, the authors feel that they can state fairly that the Swift-Ellis method is safe when the original technic is followed painstakingly Persistence is necessary to secure the best results

Oklahoma State Medical Association Journal, Muskogee

November, VIII, No 6, pp 185 216

106 Serum Therapy, Its Uses and Abuses L H Huffman, Hobart
107 Crippled Mothers S H Landrum, Altus
108 Obstetrics in Country Practice F R Wheeler, Mannford
109 Abdominal Cesarean Section C D F O'Hern, Tulsa
110 Definite System for History Taking and Case Record Filing W D Berry, Muskogee

Ophthalmology, Seattle

October, XII No 1, pp 1 212

111 Surgical Removal of Tarsal Cartilage and Palpebral Conjunctiva in Four Hundred and Two Cases for Prophylaxis, Present and Future Elimination and Eradication of Trachoma D W White and P C White, Tulsa, Okla
112 Some Clinical Studies on Trachoma Question E E Edmondson, Mt Vernon, Ill
113 Carcinoma of Caruncle, Report of Case P H Dernehl, Milwaukee
114 Local Anesthesia in Surgery of Iris and Lens P de Obarrio, San Francisco
115 Complete Left Lateral Hemianopsia with Glycosuria as Result of Slight Trauma. F E Woodruff, St Louis
116 Triple Rupture of Choroid with Iridodialysis L F Appleman, Philadelphia
117 Is Migraine Forerunner of Glaucoma? R S Lamb, Washington, D C
118 Color Testing G H Taylor, New South Wales, Australia.

Providence Medical Journal

November, XVI, No 6, pp 293 332

119 Care of Tuberculous J Perkins, Providence
120 Appendicitis J W Keefe, Providence
121 Plea for Study of Pancreatitis J B McKenna, East Providence

South Carolina Medical Association Journal, Anderson

October, XI No 10, pp 304 356

122 Control of Hemorrhage in Tonsil Enucleation J W Jervey, Greenville
123 Ovarian Cysts Report of Case in Which Tumor Weighed Eighty Five Pounds S O Black, Philadelphia
124 Ether Anesthesia W A Boyd, Columbia
125 Place of Laboratory Branch in Medical Education and Practice K M Lynch, Charleston
126 Milk in Diet of Infants D L Smith, Spartanburg
127 Stone in Wharton's Duct R T Ferguson, Gaffney
128 Banti's Disease, Report of Operative Case B B Steedly, Spartanburg
129 Tubercular Meningitis R M Politzer, Charleston

Southern Medical Journal, Mobile, Ala

November, VIII, No 11, pp 925 1014

130 Report on Sanitation of Guayaquil W C Gorgas, Washington D C
131 *Relation of Bovine Infection in Child to Clinical Tuberculosis in Adult. F M Pottenger, Monrovia, Calif
132 *Treatment of Honduranian Balantidiosis N Barlow, Cuyamel, Honduras
133 Importance of Cerebrospinal Fluid Examinations in Syphilis of Central Nervous System S R. Miller, Baltimore
134 Hereditary Syphilis in Negro Race N M Moore, Augusta, Ga
135 What Civil Surgeon Can Do for Military Surgery in Times of Peace J C Bloodgood, Baltimore
136 One Thousand Operations for Appendicitis W D Haggard, Nashville, Tenn
137 Uses and Limitations of Blood Vessel Suturing, with Special Reference to Reversal of Circulation J S Horsley, Richmond, Va
138 Neglected Eyes, the Cost J F Woodward, Norfolk Va
139 Laryngeal *Tuberculosis* J B Greene, Asheville, N C.

131 **Relation of Bovine Infection in Child**—If bovine infection quiets down and remains inactive for a time, to break down in later life the same as the human infection does, it certainly does not show as a bovine infection when it does become active again Unless transmutation occurs and the bovine bacilli of the early infection changes and becomes of the human type, Pottenger believes we are compelled to assume that bovine infections in childhood do not, except rarely, produce metastases in later life and that, in this, they are wholly unlike human infections The most rational explanation of the facts observed requires the acceptance of the idea of transmutation

132 **Treatment of Honduranian Balantidiosis**—The balantidiosis of Honduras, if uncomplicated by pathogenic amebae, according to Barlow, is best treated by methylene blue, 2 grains three times daily, not less than four days If an endamebic or similar infection is also present, emetin combined with oral administration of some suitable form of ipecac will be appropriate for both infections Especial stress is placed on the oral administration, and not less than ten days of continuous treatment With either method, at least three thorough cleansings should be given the intestines, at the beginning, middle and end of treatment If uncinariasis be present, thymol may be given if the patient is not debilitated

Texas State Journal of Medicine, Fort Worth

October, XI, No 6, pp 313 360

140 Brain and Sinus Complications of Otitis Media, with Special Reference to Symptomatology A H Andrews, Chicago
141 Accessory Sinusitis C P Schenck, Waco
142 Case of Double Chronic Maxillary Sinusitis Complicated with Unilateral Ethmoiditis E M Sykes, San Antonio
143 Some Investigations Concerning Mysterious Form and Function of Internal and Middle Ear W F Cole, Waco
144 Excessive Bleeding at Menstrual Period F R Winn, Alvin
145 Placenta Praevia, Report of Case T E Hunt, Hillsboro
146 Some Pathologic Conditions of Breasts M A Wood, Houston
147 Allergic Reactions in Pregnancy J H Black, Dallas.

Wisconsin Medical Journal, Milwaukee

October XIV, No 5, pp 181 220

148 *Disturbances of Central Nervous System Accompanying Pernicious Anemia, Report of Two Cases A W Rogers Oconomowoc
149 Nose and Throat in Etiology of General Diseases R W Porteus, Rochester, Minn
150 Cystoscopy in Surgical Diseases of Bladder and Kidney E A Fletcher Milwaukee.

148 **Nervous System in Pernicious Anemia**—Rogers concludes his paper as follows It would seem that pernicious anemia was the result of a toxemia or autotoxemia acting on the tissues of the body in general, but showing a selective action for certain tissues, preferably the red blood cells and nervous tissue Certain types of pernicious anemia, in cases in which symptoms indicating involvement of the nerve centers are first to appear, may readily be confounded with tabes, paresis, myelitis, insular sclerosis and even hysteria, the diagnosis resting with the blood examination In cases of pernicious anemia with marked involvement of nerve tissues, the blood findings are less characteristic and, too, these cases manifest a greater tendency toward remissions, making the prognosis more favorable

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Journal of Children's Diseases, London

October, XII No 142 pp 289 320

1 Education of Children with Defective Vision N B Harman
2 Case of Extra Genital Primary Chancre of Wrist G Pernet
3 Case of Extensive Pigmented and Hairy Nevus with Molluscous Tumors W M Smith

British Medical Journal, London

October 23 II No 2860, pp 593 628

4 *Analysis of Cases of Tetanus Treated in Home Military Hospitals. D Bruce
5 *Hemolytic Action of Urine in Certain Conditions C S McKee
6 Ureteral Calculus Its Symptoms and Treatment D Newman
7 Epidemic Jaundice in War Time S Moritz
8 Malaria Contracted in Flanders J M H Reid and H L Humphrys

4 **Tetanus Treated in Home Military Hospitals**—In December, 1914, a return of cases of tetanus was called for from British home military *hospitals*, and an army form issued Notes on 231 cases were sent in, of these, 98 recovered and 133 died, a mortality of 57 7 per cent The death rate in

untreated cases is stated to be 91 per cent in those of short incubation 50 per cent in those of delayed incubation If the symptoms of tetanus appeared within ten days of receiving the wound the mortality was 66 6 per cent , if between the eleventh and twenty-fifth day, 39 per cent Among the 231 cases only 37 patients are noted as having been treated with antitetanic serum before the onset of symptoms Of these 18 recovered and 19 died a mortality of 51 3 per cent The usual dose was 1 500 units, but 1 000 were given in 3 500 in 2 and 4 000 in 2 cases The average incubation period of 17 fatal cases was thirteen days, of 15 patients which recovered 18 5 days

Out of the total of 231 cases the number of patients treated with antitetanic serum after the onset of symptoms was 215 (93 per cent) Sixteen patients did not receive curative treatment with antitetanic serum in England Of these 3 recovered and 13 died mortality 81.25 per cent Of the 3 which recovered all had been treated prophylactically in France Of the 13 who died 6 had been treated prophylactically in France Of the 215 patients 116 were treated by subcutaneous injections alone, 46 recovered 70 died 7 were treated by intravenous injections alone, 1 recovered 6 died, 14 were treated by intrathecal injections alone, 8 recovered 6 died 17 were treated subcutaneously and intravenously 5 recovered 12 died 41 were treated subcutaneously and intrathecally 23 recovered 18 died, 2 were treated intravenously and intrathecally, 1 recovered 1 died, 16 were treated subcutaneously intravenously and intrathecally 8 recovered 8 died, 73 were treated intrathecally with or without subcutaneous or intravenous injections, 40 recovered 33 died It would appear that injections of antitetanic serum into the spinal canal are more effective than subcutaneous or intravenous injections Out of 200 cases 4 patients received 1 000 units or under, 2 recovered, 2 died, 61 received from 1 001 to 5 000 units, 24 recovered, 37 died, 50 received from 5 001 to 10 000 units, 14 recovered 36 died 20 received from 10 001 to 15 000 units, 12 recovered 8 died, 19 received 15 001 to 20 000 units, 6 recovered, 13 died, 19 received from 20 001 to 30 000 units, 10 recovered, 9 died, 14 received from 30 001 to 40 000 units 9 recovered 5 died, 13 received from 40 001 to 147 000 units 9 recovered 4 died

The main conclusion drawn by Bruce from a study of these patients treated therapeutically by antitetanic serum is that it seems highly probable that the serum has little or no effect on the course of the disease. There is a little evidence that, if the serum has any effect at all then the intrathecal method of injection is the most effective in as large dose as possible and repeated as often as safe and practicable as long as symptoms persist If there is any likelihood that tetanus toxin is still being absorbed into the blood stream from the wound then in addition to the intrathecal injection, a further quantity of serum may be introduced intravenously and subcutaneously In this way 3 000 to 5 000 units could be injected into the spinal canal and 10 000 to 20 000 into vein and under the skin Thirty-three patients were treated by phenol injections, 12 patients recovered and 21 died (63 6 per cent) Nine patients were treated with magnesium sulphate, of these 7 patients died and 2 recovered Bruce sums up the treatment of a case of tetanus as follows (a) Place in a quiet, darkened room under care of a sympathetic and capable nurse (b) The best surgical treatment of the wound should be thoroughly carried out to insure the prompt and complete removal of all septic products (c) The intrathecal injection of at least 3 000 units of antitetanic serum At the same time 10,000 to 20,000 units may be injected intravenously and subcutaneously This procedure to be repeated as frequently as the course of the disease seems to demand (d) In addition to this the patient should receive sedative drugs, such as chloral or chlorbutanol in full doses

5 **Hemolytic Action of Urine**—A phenomenon found by McKee to be of fairly constant occurrence in certain morbid states, is here described, namely, the rapid laking of blood corpuscles by the urine It has never been noted in the urines of normal individuals The agent causing this hemolysis is left an open question but there is no doubt in McKee's mind that it is not a normal constituent of the urine Save in the case of certain strongly hemolytic alkaline urines, of which one drop sometimes causes instant laking of the blood emulsion at room temperature, the hemolytic process requires incubator temperature of 37 C Sodium bicarbonate definitely influences the reaction in vitro, and possibly when administered to patients by mouth This appearance of a body or bodies in urine of a more or less actively hemolytic nature is a fairly frequent accompaniment of grave disturbances of metabolism In severe chronic anemia the reaction is frequent but not of daily occurrence and after having tested and cross tested the red cells of several pernicious anemia cases, it appears that some patients' cells are much more resistant than others but also that all are less resistant than normal cells The reaction is obtainable in erysipelas, gout acute rheumatic fever, advanced tuberculosis, and certain cases of syphilis In acute rheumatic fever the urine was found to lake blood cells in all cases at some period during the course of the disease in most cases all through the acute stage The same has been true of severe erysipelas and streptococcal throat cases In syphilis the reaction depended on the severity of the symptoms In all severe burns the urine has been regularly hemolytic and has remained so until death or recovery was well assured In some cases of skin disease in which a large part of the skin surface has been involved laking by the urine has been common and persistent In two cases of phenol poisoning the urine twenty-four hours later, was intensely hemolytic and remained so till death In starvation the reaction appeared to depend on the severity of the symptoms In cancer with wasting the reaction has always, so far, been present. In septic cases also it is common

Journal of Royal Naval Medical Service, London

October I No 4 pp 373 509

9 Report on Cerebrospinal Fever in Royal Navy H D Rolleston
10 Use of Hypochlorous Acid as Antiseptic in Naval Medical Service H E. R Stephens
11 Surgical Technic on Board Royal Naval Hospital Ship Drina R J Willan
12 Possible Recurrence of Mediterranean or Undulant Fever and Its Treatment by Sensitized Vaccines P W Bassett Smith
13 Vital Importance of Efficient Training of Naval Ratings in First Aid R J G Parnell
14 Mental Conditions as Observed Among Ship s Company of Battleship in War Time T Beaton

Lancet, London

October 23 II No 4808 pp 901 956

15 *Cases of Tetanus Treated in Home Military Hospitals. D Bruce
16 Pellagra F M Sandwith
17 Treatment of Cerebrospinal Fever in Royal Navy H D Rolleston
18 Traumatic Asphyxia Report of Case W W Linington
19 Condition of Lungs during Recovery from Chest Wounds. T G Brodie and J J Mackenzie
20 Nystagmus and Allied Conditions J A Wilson
21 Effect of Nauheim Baths on Cardiac Conductivity and Contractility L. T Thorne
22 Anesthesia (General and Spinal) for Suprapubic Prostatectomy J D Mortimer
23 *Cases of Diarrhea from Gallipoli A. E A Ismail.
24 Case of Tapeworm Accompanied by Hemoglobinuria. W E. Masters.
25 Case of Complete Inversion of Uterus. C L Fraser

October 30 No 4809 pp 957 1008

26 Wound Infections and Their Treatment (To be continued) A E Wright.
27 Case of Tetanus of Short Incubation Period (Five Days) with Recovery R L. Scott.
28 Four Cases of Congenital Pulmonary Stenosis D Martin.
29 Use of Hypertonic Saline Solution in Gynecology C. White.
30 Three Cases of Concussion Aphasia Treated by General Anesthesia A. P Procter
31 Case of Self Inoculation with Bacillus Aerogenes Capsulatus K. Taylor

15 See *British Medical Journal* Abstract No 4

Quarterly Journal of Medicine, London

October IX No 33 pp 1 65

32 Clinical Observations on Atrioventricular Rhythm G D Mathewson.
33 *Case of Pancreatic Insufficiency E I Spriggs and A. J Leigh
34 *Researches on Perfused Heart. W Burridge.
35 Recent Researches Dealing with Typhoid and Paratyphoid Infections A C Inman.

63 Ligation of Carotid Arteries A Broca
64 Abortive Tetanus with Long Incubation and Protracted Evolution H Claude and J Lhermitte

October 21, No 50, pp 409 416

65 The Thumb Sign in Ulnar Paralysis (La prehension dans les paralysies du nerf cubital et le signe du pouce) J Froment

58 **Atrophy of Muscles in Wounded Soldiers**—This communication refers to trophic disturbances in muscles which apparently have little or no connection with the wound An illustrated description is given of four typical cases The atrophy develops independent of any detectable lesion in the central or peripheral nervous system, and seems to be the result of nutritional disturbances in the muscle, primary or secondary to some reflex irritation The men had all been wounded but at some point more or less remote from the scapular region which was the usual site of the muscular anomalies The ultimate outcome is a question which time alone can answer

60 **Intravenous Injections Without Distilled Water**—Ravaut relates that distilled water is not to be had in his service near the firing line He has found that it can be dispensed with and ordinary contaminated water used without harm, by the simple precaution of pressing the tip of the syringe down on a wad of cotton at the bottom of the dish in which the water has been boiled By aspirating the water thus into the syringe through the thick wad of cotton the water is effectually filtered and he makes the intravenous injection without apprehension

61 **Prophylaxis of Venereal Diseases**—Balzar reviews the experiences in this line in different armies during the present and other recent wars He emphasizes the responsibility of the military medical authorities in supervision and control of sources of possible infection, in early detection of infection, and most effectual treatment His recommendations for abortive treatment are based on his long experience at the Saint Louis Hospital in Paris He insists that a special record must be kept by the physician of each case of gonorrhea or syphilis, and an individual record given each patient which he should present to each physician to whom he applies These individual cards might be utilized for brief instructions and warnings as to the gravity of the disease As models in this line he cites the bulletins issued by the Societé de Prophylaxie sanitaire et morale during the last fifteen years, and Guiart's recent work, "Syphilis et blennoragie"

62 **Toxins of Helminths**—Paulian injected guinea-pigs with alcoholic extracts of various intestinal parasites, including ascarides, oxyuris and tenia Other tests were made with macerations of their bodies He found evidences of severe toxic action, from congestion and hyperemia to actual degeneration of tissues, loss of resisting powers of the red corpuscles, intense anemia and eosinophilia The nervous disturbances and even the eosinophilia may be regarded he thinks, as phenomena of anaphylaxis His findings confirm those reported by others except that he never detected the lesions described by Rachmanov in the nervous elements The organs predominantly affected were the spleen, kidneys and liver, the latter showing fatty degeneration in one animal The suprarenals were always hyperemic and with intertrabecular hemorrhages

Berliner klinische Wochenschrift

October 18, LII, No 42 pp 1081 1104

66 Itching and Pain (Jucken und Schmerz) P G Unna To be continued
67 *Production of Bile Pigment Outside the Liver (Ueber anhepatische Gallenfarbstoffbildung) A A H van den Bergh and I Snapper (Groningen)
68 Standard Weight for Adults (Die Gärtner'sche Normalgewichtstabelle fur Erwachsene) G Oeder
69 Experiences with Infectious Diseases in Field Hospital Grundmann To be continued
70 *Hard Filtered Roentgen Rays in Treatment of Skin Diseases F M Meyer

67 Practically the same article was summarized in The Journal, Sept 4, 1915, p 913

70 **Filtered Hard Roentgen Rays in Treatment of Skin Diseases**—Meyer enumerates a number of advantages from using filtered hard rays, among them the less danger of a reaction, the shorter exposures required, and that various skin affections refractory to ordinary Roentgen treatment yield to the filtered hard rays, as he describes in detail

Correspondenz-Blatt fur Schweizer Aerzte, Basel

October 2, XLV, No 40, pp 1249 1280

71 *Treatment of Tetanus T Kocher

October 9, No 41, pp 1281 1312

72 Blood Findings Reveal Leukemia in Puzzling Cases (Die hamatologische Diagnostik der Leukämien) A Suter
73 *Experiences with Smallpox Tièche

71 **Treatment of Tetanus**—Kocher discusses some recently published cases of tetanus developing after prophylactic serotherapy and under magnesium sulphate treatment, and exonerates these two measures In his own last three cases, the one adult died of pneumonia when the tetanus was under control The two children were brought through safely The tetanus was extremely severe in one of them, a boy of 10, with a six-day incubation and no antitetanus serum Magnesium sulphate was given freely to keep the muscles constantly relaxed first subcutaneously, then intramuscularly to a total of 315 gm of the sulphate, in a 25 per cent solution, in the course of eighteen days Kocher reiterates that the main point is to gain time tiding the patient along until enough antibodies are produced to neutralize the tetanus toxin The magnesium sulphate helps to tide the patient through this waiting period and Kocher announces that by fractioning the maximal dose over the twenty-four hours it can be given for from six to eighteen days without harm He regards his recent experiences as suggesting great progress in that they show that it is not necessary to give the full dose at one time but that it can be distributed over the twenty-four hours *commencing with the largest fraction of* the dose, and reaching the total dose of 1 5 gm per 1 kg weight before the close of the twenty-four hours The severer the case, the larger the portion to be given at first and it may be well to inject it into a vein or into the spinal canal

He insists further that it is not necessary to give enough of the drug to relax the muscles completely, all that is necessary is to reduce the excitability of the centers to the point that the paroxysms no longer occur, even although some stiffness persists Managed in this way, there is practically no danger of paralysis of the respiration This is explained by Straub's discovery that the paroxysm-producing overexcitability subsides before the ability to respond to physiologic stimuli becomes paralyzed He also comments on the cumulative action of the drug and its rapid elimination The latter proceeds most rapidly after intravenous injection, next, after intramuscular, and most slowly after intraspinal injection Kocher advocates prophylactic subcutaneous injection of 10 c c of antitetanus serum repeated the fifth, eighth and twelfth days If the magnesium sulphate is given by intraspinal injection he has the patient lie flat, only the head, not the neck, on a pillow If the muscles of the trunk and chest do not relax the head must be lowered the whole body slanting downward The deep narcosis which this induces is useful, but there is danger of arrest of respiration He keeps the Meltzer apparatus beside the bed, ready to use it at the first sign of trouble, but he uses oxygen instead of air The heart is not affected by the sulphate, and he emphasizes that the respiration stoppage is really not dangerous under proper care

73 **Smallpox**—Tieche relates a number of incidents from two recent visitations of variola in Swiss cantons where vaccination is not compulsory The cases were mostly in imported laborers, but several occurred in persons who had been twice vaccinated One unvaccinated small child developed smallpox in a building that had been used to house a few smallpox patients The interval since the last case had been twenty-seven months, and the premises had been supposedly thoroughly disinfected at the time His further

experience has confirmed the reliability of the skin allergy reaction in differentiating variola from varicella (Described in The Journal, Nov 7, 1914, p 1702) He relates several cases in which it proved a great convenience definitely clearing away the suspicion of smallpox in hotel inmates or demonstrating the necessity for their immediate isolation

Medizinische Klinik, Berlin

October 10 XI No 41 pp 1119 1146

74 *Treatment of Suppurating Wounds of the Knee. (Zur Behandlung eiternder Knieschusse) H Schloffer
75 Surgical Preliminaries for a Functionally Capable Artificial Hand (Chirurgische Vorarbeit fur eine willkurlich bewegliche kunstliche Hand) F Sauerbruch
76 Experiences of a Surgeon During the Siege of Przemysl R Pamperl
77 Importance of Dosage and Filtering in Roentgen Depilation F M Meyer
78 Simple Technic for Secondary Amputation W Pfeilsticker
79 Fenestrated Plaster Casts for First Treatment of Fractures in War (Erhebungen uber die Brauchbarkeit der gefensterten Gipsverbande fur die erste Behandlung der Schussfrakturen im Kriege) C. Hempel
80 Frame to Hold Stretchers for Operations. A Partos
81 First Measures in Case of Fracture H Spitzy and A Hartwich To be continued

74 **Treatment of Suppurating Knee**—Schloffer has been surprised by the excellent results obtained by opening up the suppurating joint, and immobilizing it held at an acute angle. He has applied this technic in eleven cases and was able to save the limb when amputation seemed otherwise unavoidable The condition at the *Aufklappung* and the outcome later are shown in eight illustrations, and the advantages over resection are extolled Even when bone has been shattered, resection may be restricted to removing merely the loose scraps

Münchener medizinische Wochenschrift, Munich

October 12 LXII No 41 pp 1381 1416

82 *Anaerobic Sepsis B O Pribram
83 Experiences with Partial Antigen Treatment of Tuberculosis (Erste Erfahrungen mit Deycke-Muchschen Tuberkulosepartialantigenen im Hochgebirge.) W Muller
84 Early Exercises with Extension Dressings. (Fruhmobilisierung im Zugverband) A Ziegler
85 The Prothesis Question after Amputations. Spitzy
86 Treatment of Gunshot and Shell Wounds of the Upper Arm (Kriegsverletzungen des Oberarms) E v Redwitz
87 Mechanical Protection against Flies (Zur Bekampfung der Fliegengefahr) Seelhorst
88 Experiences in a Field Hospital E Sonntag Commenced in No 40
89 Experiences of a Troop Medical Officer (Erfahrungen eines Truppenarztes.) Haehner Commenced in No 40
90 Roentgen Localization of Foreign Bodies especially in Eye and Orbit. L v Liebermann Jr
91 Denunciation of Collective Inquiry on Sexual Abstinence (Sammelforschung der Deutschen Gesellschaft zur Bekampfung der Geschlechtskrankheiten uber die Frage der sexuellen Abstinenz.) R Schaeffer

82 **Anaerobic Sepsis**—Pribram found anaerobic bacteria of different kinds in the blood in some severe cases of gas phlegmon He declares that the organism seems to be perfectly helpless against this invasion of the blood by the anaerobics, as their products cause rapid coagulation of the blood. From the finest capillaries to the larger vessels, all become plugged with thrombi, thus shutting off the oxygenated blood which would be unfavorable for the anaerobes They can thus proliferate unmolested in the dead tissues which amply explains the gravity of the gas phlegmon process Even deep incisions into the region bring no blood this is more characteristic of anaerobic infection than the production of gas As long as anaerobes are limited to this region there are no general symptoms except the fever But when they break into the circulation, the respiration becomes like that of diabetic coma the blood pressure declines, the body grows cold and death follows from gradual failing of the heart During this phase bacteriologic tests of the blood always gave positive findings Necropsy a few minutes after death showed the heart and coronaries full of bubbles and in some cases the liver, kidneys and spleen were foamy—all he thinks the result of the production of carbon dioxid in the blood vessels Some cases are described in detail Pribram reiterating that there are scarcely any other bacteria against which we are so powerless as anaerobics when they have an opportunity to localize in broad masses of muscles He adds that possibly serology may yet provide us with a weapon against them

Wiener klinische Wochenschrift, Vienna

XXVIII No 36 pp 965 992

92 Peculiar Features of War Typhoid G Herrnheiser
93 *Nephrotyphoid F Deutsch
94 Reaction Disturbances after Inoculation against Typhoid M Lowy
95 Alimentary Toxic Polyneuritis in Mother and Daughter G Bikeles
96 *Test for Urobilin in Urine and Stool A Edelmann
97 Suggested Chart for Record of Action of Therapeutic Measures to Permit Comparison Better (Vorschlage zu einer geregelten Heilstatistik) O Klaus

No 37 pp 993 1020

98 *Motility Test for Typhoid Bacilli in Water M V Carbonell
99 Treatment of False Aneurysms Zahradnicky
100 Anise Oil in Treatment of Scabies A Perutz

No 38 pp 1021 1048

101 *Detection of Tendency to Epilepsy S Jellinek
102 Wounds of the Skull (Erfolge und Misserfolge bei der operativen Behandlung der Schadelschusse) B O Pribram (Ueber Schadelschusse) M Maresch
103 Charcoal in Sterilization of Fluids. R Kraus and B Barbara
104 Sources of Error in Bacteriologic Diagnosis of Dysentery H Egyedi and W Kulka
105 Gas Phlegmons M Cernic
106 Inoculation of Army against Typhoid K. Russ. Commenced in No 37

93 **Typhoid Nephritis**—Deutsch relates that three persons in one house developed in turn acute nephritis with high fever It proved to be the only local manifestation of typhoid fever Typhoid bacilli were found numerous in the urine in one case the fourth day and also in the blood The bacilli in all the cases were persistently serum-proof, not clumping at 1 50 The patients were children, the intervals between the cases were eleven and four weeks

96 **Test for Urobilin in Urine and Stool**—Edelmann's test is a modification of Schmidt's test for feces which is based on the red pigment formed when dissolved feces are treated with a concentrated aqueous solution of mercuric chlorid By using an alcoholic solution, he states, the reaction is much more pronounced One of the two reagents is a 10 per cent alcohol solution of mercuric chlorid The other reagent is a 10 per cent alcoholic solution of zinc chlorid and amylic alcohol Only one or two minutes are required for the test, and its simplicity adapts it, he reiterates, for bedside use.

98 **Motility Test for Differentiating Typhoid Bacilli in Water**—The Journal described Sept. 4, 1915, p 908, the U tube, with sand in one side, through which motile bacteria readily make their way The nonmotile stay in the sandless side in which they were all placed originally, while the motile typhoid bacilli make their way through the sand and proliferate above it

101 **Detection of Tendency to Epilepsy**—Jellinek lists the points which differentiate a true epileptic seizure from a hysteric spasm Among them he notes that in true epilepsy the face muscles twitch predominantly while in hysteria the muscles of the trunk or limbs are most affected With epilepsy the spasmodic movements are synchronous on one side of the body In hysteria it is the whole of the upper part of the body or the legs alone that are mainly affected After an epileptic seizure the individual feels prostrated and takes long to recover, while recuperation is rapid and complete after a hysteric attack. He adds that the Babinski toe sign, plantar flexion of the big toe, seems to be a reliable sign of true epilepsy He found it constant in all his cases of epilepsy while the sign could never be elicited in any of his numerous hysteria cases

Zeitschrift für Tuberkulose, Berlin

September XXIV No 5 pp 321 400 Last indexed Oct 9 p 1315

107 *Origin of Tuberculous Apical Lesions (Betrachtungen über die Entstehung der tuberkulosen Lungenspitzenphthise. V) C Hart.
108 *Tuberculosis in the Active Army (Die Tuberkulose im Heere zur Zeit des Krieges) G Schroder

109 *The War and Pulmonary Tuberculosis (Krieg und Lungentuberkulose) H Grau
110 Tuberculosis in the Prisoners of War (Die Tuberkulose der Kriegsgefangenen) G Liebe

107 **Factors Leading to Apical Tuberculosis**—Hart reviews much of the literature on this subject in this fifth article of the series His own view is that a constitutional predisposition is the most important factor that determines the direction of the individual's fate so far as tuberculosis is concerned The mode of life, the environment, unhygienic conditions in general breed tuberculosis only as they develop a latent into a well defined predisposition Bacmeister contends that in children a localized and healed tuberculous focus in the lung might deform the upper aperture by muscular contraction in Pottenger's sense Hart rejoins to this *Man soll nicht papstlicher als der Papst sein* Pottenger's theory presupposes a primary apical process, and this we all know is a great rarity in children while in adults deformity of the aperture precedes the development of the tuberculous apical process Hart insists that conclusions drawn from experiments on dogs cannot be applied to man He has devised a method for experiments on monkeys which he thinks seems very promising, and he has not given up the hope that some day he may have the means to undertake research in this line He is convinced that tubercle bacilli can exist as saprophytes in the lungs, or, as Liebreich expresses it, as nosoparasites There may be functional, secondarily acquired and congenital factors cooperating mechanically inducing a predisposition in the apex region for defective circulation of blood and lymph, thus providing conditions favoring localization of tubercle bacilli

108 **Tuberculosis in the Active Army**—Schroder remarks that the war conditions are like a laboratory experiment on a vast scale to decide certain questions as to the etiology of tuberculosis The importance of a constitutional predisposition is exemplified again and again in the men who develop tuberculosis in active service They all had had some tuberculous process early in life, but it had healed in time and the men were sound to all intents and purposes Then came the war, with its tremendous demands on heart and mind, physical deprivations, powerful emotional stress and inadequate or defectively cooked food, colds, etc These factors are liable to rouse the latent, practically healed old foci and fan them to a flame, or start new endogenous foci elsewhere, the physical exertions of active service whipping up the circulation of blood and lymph and aiding in disseminating the germs He knows to date of no instance of tuberculous processes developing in bones or joints in connection with external injuries, but these injuries, by lowering the resisting powers, favor metastasis

All these factors act more potently in case of constitutional physical inferiority On the other hand, the out-of-door life, muscular exercise and strengthening of the will power aid in combating the action of the invading germs so that in many cases the old latent foci remain latent, and the number of men developing active tuberculosis is less than might be expected At the same time, early recognition of the flaring up of the old process and a prompt course of sanatorium treatment arrest the autoreinfection in many cases, so that there is every prospect that a not inconsiderable number of the men can be restored to the army in time The main thing, therefore, is to distinguish between active and inactive cases, that is, those not requiring treatment He outlines the examination necessary to determine this, including the minute inspection of all the organs, weighing the previous history, and signs of constitutional inferiority, unstable pulse, anemic heart murmurs and weak heart action, examination of the upper air passages and ears, taking the mouth temperature morning and afternoon every two hours and the temperature in the rectum before an hour's walk, after it, and again after half an hour of repose The subcutaneous tuberculin test is not a reliable criterion as to whether a focus is active or latent, while he has seen harm result from it. The skin test is decisive for the diagnosis only when it is negative, but it may aid in the prognosis as a pronounced response to the graduated titration test, in the absence of signs of active tuberculosis indicates a favorable prognosis He says of tuberculin treatment that artificial production of "anergy" by no means signifies a cure of the tuberculosis, an acquiring of immunity, but rather the reverse Individuals thus artificially rendered tuberculin-proof seemed more inclined to relapses than those not taking tuberculin The proportion of soldiers recovering clinical health after a course of sanatorium treatment is larger than among civilians At the Schomberg sanatorium only 3 4 per cent of the 200 died or were dismissed as incapable of further military service

109 **The War and Pulmonary Tuberculosis**—Grau gives his impressions from observation of 100 tuberculous men at the Rheinland sanatorium In two cases the men were unusually well developed but there was a suspicion of tuberculosis in the history, and after a period of exhausting overexertion both developed a febrile tuberculous process in the costal periosteum The local process has persisted unmodified during the six months since, with occasional febrile periods In some other cases, the inoculation against typhoid seemed to rouse a sleeping tuberculous focus, with prolonged fever afterward In these and the rib cases the specific resisting power of the organism seems to have been unfavorably modified A number of other interesting cases are described, the war affording typical examples of the numerous different causes that are liable to induce tuberculosis

Pediatria, Naples

October, XXIII No 10 pp 689 752

111 Connection between Rachitis and Inherited Syphilis (*Sul cosidetto* "rachitismo sifilitico) S Mura
112 Streptothrix Cerebrospinal Meningitis in Six Months Infant G *Rutelli*

Policlinico, Rome

October 10, XXII, No 41 pp 1365 1400

113 The Soldier's Ration (L'alimentazione del soldato) G Dragotti

October 17 No 42 pp 1401 1436

114 Lesions of the Nose and Accessory Cavities in War G Ferreri Commenced in No 40
115 *Revulsion with the Actual Cautery *in Treatment of Inflammatory* Tuberculous Processes (Le punte di fuoco nella terapia delle cosi dette tubercolosi inflammatorie.) A Maffi
116 Artificially Induced Lesions and Workmen's Compensation (Le lesioni artificiali negli infortuni sul lavoro) S Diez

October Surgical Section No 10, pp 463 500

117 Treatment of Gunshot Wounds of the Shoulder (2 casi di ferite di arma da fuoco a pallini della spalla) O Cignozzi
118 *Effectual Biochemical Action of Copper Sulphate in Treatment of Uterine Cancer (Cancro dell' utero guarito col solfato di rame) L Manara
119 Deviation of Complement Test in Echinococcus Disease in Man L C Zapelloni To be continued
120 Mixed Tumors of the Palate G Morone. To be continued

115 **The Actual Cautery in Revulsion Treatment of Inflammatory Processes**—Maffi states that laymen in his country have an exalted opinion of the efficacy of revulsion with the actual cautery applied at numerous points over and around a long continued inflammatory process This is also a favorite therapeutic measure of French physicians, especially in country practice In a recent case of a tuberculous process in the knee, after failure of other measures, he yielded to the patient's insistence and applied the actual cautery at fifty points to encircle the knee The spontaneous pain subsided at once, in forty days the patient was able to get up and in another month to walk without pain or further impairment of function Encouraged by this experience, he has applied the measure since in all forms of what Poncet calls inflammatory tuberculosis, joint troubles, ostitis, neuralgia, synovitis, etc , and has obtained surprising effects, he relates, with revulsion in this way as an adjuvant to repose, fresh air and sunlight He uses the ordinary thermocautery, with a blunt point, about 4 or 5 mm , and plunges it into the derma, sometimes to a depth of 1 cm as in a case of sciatica rebellious to all other measures After cauterization in this way at 100 different points on the buttocks and rear of the thigh, the neuralgia subsided promptly and permanently After the cauterization he applies gauze with a little borated petrolatum Change to a country life is always the surest means to cure in all such cases He reiterates that this

form of revulsion with the actual cautery is always harmless and was borne perfectly even by his most sensitive patients

118 Copper Sulphate in Treatment of Cancer—Manara gives a number of views of the microscopic findings in a case of cancer of the cervix in a woman of 49 They show the varying aspect of the pus and scrapings from the cancer during a course of copper sulphate treatment with final cure and no signs of recurrence during the months that have elapsed since The woman had refused an operation and treatment was merely a daily intramuscular injection in the buttocks of a 1 per cent solution of ammoniacal copper sulphate in distilled water He relates that the glycogen in the neoplasm transforms the copper sulphate reaching it, into copper oxid Under the caustic action of this copper oxid the cancer tissues swell and break down into an amorphous mass This arrests the growth of the cancer which thus becomes transformed into an afebrile, mild inflammatory process which gradually heals The course of these changes can be traced in the microscopic findings reproduced in the typical cases reported, all of which confirms his previous announcements on the subject. Cancer elsewhere than in the uterus is less protected against injury from without or from digestive juices, etc so to date he commends the copper sulphate treatment only for uterine cancers

Riforma Medica, Naples

October 9 XXXI No 41 pp 1121 1148

121 *Successful Use of Quinin in Mild Protracted Fevers (La cura chininica delle febbricole) C Rummo and L. Ferrannini
122 Congenital Hernia of the Diaphragm C Volpe
123 Pneumococcus Empyema and Peritonitis L Della Valle

121 Quinin in Chronic Mild Fever—Rummo and Ferrannini refer to cases that seem to be common in Italy in which the temperature runs up a trifle above normal at some time in the day and this keeps up for weeks or months When tuberculosis and syphilis can be excluded they have found that a large dose of quinin by the mouth for a ten-day period restores the temperature permanently to normal in 80 or 90 per cent of the cases There does not seem to be any specific effect from the quinin but merely an antiseptic and antitoxic influence on the blood which exerts an unfavorable action on all micro-organisms with which it comes in contact. Test tube experiments confirm the inhibiting influence of quinin on development of the colon and paratyphoid bacilli and others A few typical instances of what they call *febbricole'* are described showing the effectual action of the quinin with a few refractory cases Among the latter are two women who have had abnormally high temperature during part of the day, as a rule for eight or nine years Serologic tests have been constantly negative and several courses of quinin have not modified the temperature in any way The daily dose is 1 or 1 5 gm, fractioned taken while the temperature is at its lowest range. If one course is not effectual, they repeat it after a pause of four or five days If three of these courses fail they accept the case as refractory and cease to push the quinin The functioning of the kidneys and liver must be carefully supervised throughout.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

September 25 II No 13 pp 1559 1646

124 *Research on Phagocytosis Suggests an Explanation of Certain Features of Chloroform Anesthesia (Verklaring van het excitatiestadium der chloroformnarcose in verband met onderzoekingen over phagocytose) H J Hamburger
125 *Conjunctivitis Probably Part of Clinical Picture of Foot and Mouth Disease in Young Man (Een geval van mond en klauwzeer met oogverschijnselen?) L. A Faber Jr

October 2 No 14 pp 1647 1726

126 *Importance for Diagnosis and Prognosis of Retention of Nitrogen in Chronic Nephritis (Over stikstofretentie bij chronische nephritis) R. R Rochat and M Hijmans.
127 *Clinical Importance of the Urea Index in Chronic Kidney Disease (De klinische waarde van de onderzoekingsmethoden volgens Widal Ambard bij chronisch nierlijden) D Klinkert. Commenced in No 13
128 Disturbance in Executing Volitional Movements (Over sommige stoornissen in de uitvoering van eenvoudige willekeurige bewegingen) W Van Woerkom Commenced in No 12
129 Mucilaginous Seeds to Combat Constipation especially Plantain Seeds. (Het zaad von plantago major als afvoermiddel) H and J Pinkhof
130 Recurrence of Quartan Malarial Fever after Intermission of Forty Two Years. I van der Heiden

124 Factors Causing Agitation Phase in Chloroform Anesthesia—Hamburger has been studying the process of phagocytosis as influenced by drugs He mixed fine charcoal or sawdust with leukocytes in salt solution and counted the number of leukocytes that had incorporated the foreign particles, counting them before and again after a drug had been added to the suspension of leukocytes In this simple way he was able to sift out the drugs that promoted from those that depressed phagocytosis Minute quantities of calcium always augmented phagocytosis, suggesting the use of calcium in treating wounds Iodoform has a similar influence but iodin checks phagocytosis abruptly Iodoform and likewise chloroform and all other substances tested which dissolve fats lipoid substances all have a pronounced accelerating influence on phagocytosis when in very dilute solutions The results of recent research indicate that the outer layer of certain cells consists of a lipoid substance As the drugs of this class, including chloroform and benzol dissolve this lipoid coating the ameboid movements are facilitated, and phagocytosis is thus promoted When the drug in question is in a stronger solution then it does more than merely dissolve the outer coating of the cell, it gets inside and acts on the body of the cell paralyzing it and hence all ameboid movements cease and phagocytosis is completely arrested

Hamburger tested further whether the presence of oxygen had an influence on these phenomena and found to his surprise that phagocytosis was most pronounced the less oxygen present. Study of this phenomenon revealed its close analogy with the behavior of the functioning of the respiration center The latter is stimulated by carbon dioxid and depressed by oxygen When respiration is impeded the oxygen content of the blood becomes low and thus also the amount of oxygen reaching the respiration center, the latter under the influence of this becomes stimulated above the normal conditions The circumstances are thus like the acceleration of phagocytosis and in both conditions the stimulation carried too far forces the cell and the respiration center to excessive functioning, which leads to paralysis in time—the respiration center ceasing to work. The functioning of the respiration is thus shown to be not a special phenomenon but a general property common to all nerve cells

It is possible that the vomiting center might be influenced by inhalation of oxygen deep breathing alone might bring sufficient oxygen to depress the functioning of the vomiting center and thus arrest the tendency to vomit Experiments with potassium cyanid showed that this also stimulates both the respiration center and phagocytosis probably because it prevents them from getting the oxygen present, and thus acts like deprival of oxygen by other means Carbon dioxid also affects the respiration and phagocytosis in the same way first stimulating and then forcing the stimulation to excess and consequent paralysis It is possible that this may explain in part the benefit from Bier s stasis hyperemia The higher nerve centers probably feel the effects of deprivation of oxygen the same as other cells, and they are thus stimulated to extra functioning when oxygen is shut off This is what happens when chloroform is given When the patient has inhaled a little at the very beginning of the anesthetization the small amount of chloroform thus taken checks the gas interchanges thus shuts off the oxygen supply to the brain cells and they are stimulated to extra functioning This is manifested clinically by the phase of agitation Then the overstimulation brings paralysis, and we say the anesthesia is complete. In conclusion Hamburger describes what he calls 'endochemotaxis' which explains the mechanism of ameboid movements in general

125 Foot-and-Mouth Disease in Man Involving the Eyes—The young man applied for treatment because vision had become impaired in the last twenty-four hours and there was a feeling of oppression over the eyes Otherwise he felt well but vision was 1 100 and 1 60 in the right and left eyes, respectively The fundus seemed normal the first day, but the next day showed some congestion in the retinal vessels Glasses brought no improvement in vision The ophthalmologist ascribed the disturbances to the fact that the young man had been doing some work with a benzin flame. Fever and a chill developed the day after the disturbance in vision was noted, and during the following week lesions developed in the mouth and on the soles suggesting foot-and-mouth disease, as also on the genital organs There was no fever after the first day, but conjunctivitis and iritis developed, and by the twenty-third day vision was still only 1 3, and embolic foci were evident in the fundus, no leukocytosis, no eosinophilia, no Wassermann reaction The mouth lesions had not entirely retrogressed and there was still some conjunctivitis the fourth week By the end of the second month, vision was normal and there were no further symptoms The only trace of the trouble left was a slight tendency to night blindness Some cases of foot-and-mouth disease in cattle were known in the district The young man never drank raw milk but, being a coppersmith he mended milk cans Others have reported involvement of the genital region in foot-and-mouth disease, but Faber knows of no case on record with involvement of the eyes, and he is not positive as to whether this was the correct diagnosis in his case The blisters burst and ulcerated The lesions on the feet and hands were all below the ankle and wrist

126 **Retention of Nitrogen in Chronic Nephritis**—Rochat and Hijmans have been investigating the urea content of the blood in 110 persons with healthy kidneys, as they describe in detail The range was from 0 117 to 0 667 Computed by Ambard's formula, the range in 112 persons was below 0 09 Accepting 1 00 as the standard in health, not one of the healthy subjects surpassed this, while the patients with chronic kidney disease always gave a much higher figure, and the increasing urea content was always paralleled by aggravation of the clinical symptoms The discovery of a high urea content often cleared up a puzzling diagnosis before any definite symptoms of uremia became apparent A number of experiences are related all confirming the simplicity and reliability of the Ambard formula for sifting out the cases of kidney disease with retention of salt This gives the clue to treatment and saves inflicting useless restrictions on the patients With retention of nitrogen, of course, nitrogenous food should be restricted and the calories supplied in other ways He lists for comparison some of the more common foods showing that 100 gm each of sugar and butter represent 400 and 786 calories with no albumin, 100 gm rice and bread, 253 and 235 calories with 7 gm albumin, while 299 gm potatoes represent 276 calories with 6 gm albumin, 200 gm green vegetables 6 calories with 5 gm albumin, 50 gm meat, on the other hand, has 10 gm albumin to 66 calories Ambard's formula and the bases for it have been described in THE JOURNAL, one communication on the subject was published March 7, 1914, p 813

127 **The Ambard Formula in Chronic Kidney Disease**—Klinkert reports fourteen cases of chronic nephritis in which the course was traced with Ambard's formula (see preceding abstract) Three of the patients were men of 24 or 30 with albuminuria but the Ambard formula showed constantly normal figures for the urea index, and the course of the cases confirmed the assumption that there was merely a tendency to orthostatic albuminuria When a normal Ambard index is confirmed by a normal response to the test ingestion of 20 mg urea on a test diet, the suspicion of chronic kidney disease, even in its earliest incipiency, is rendered untenable In three other cases the Ambard formula warned of impending danger and by dietetic restrictions based thereon the danger was averted, the headaches cured and the Ambard index brought to normal

The value of the blood-urea index seems to be confirmed anew by the fifteen cases related There is retention of nitrogen in all forms of uremia, and although the patient may seem not to be incommoded by it, yet his life hangs by a thread unless the diet is regulated to keep down the nitrogen to a low point and thus leave little to be retained The urea content of the blood is thus reduced and the patient's symptoms improve as a rule, but not invariably Uremic poisoning is not a simple quantitative retention, it is probably above all a qualitative dyscrasia How otherwise, he remarks, can we explain the polyuria, pruritus, etc., liable to develop before, with our best tests, we are able to detect any quantitative increase of the urea content The retina mirrors the true condition and especially the improvement on an appropriate diet This can be counted on most regularly in cases with not over 1 5 gm urea In all cases however, he urges that the restriction of albumin must not be too rigid as this is liable to do more harm than good By taking into consideration the general physical and psychic condition, along with the Ambard index, he thinks that it will be found an important aid in guidance of the different cases It at least gives us a railing to hold by where, till now we have been groping in the dark

Hospitalstidende, Copenhagen

October 6 LVIII, No 40, pp 1015 1046

131 *Achylia and Anemia with Chronic Polyarthritis G V T Borries
132 Interchanges in Air in Human Lungs (Om Blanding af Luft i Menneskets Lunger Forsøg og Kritik) A Krogh and I Lindhard

October 13, No 41 pp 1047 1074

133 *Treatment of Postoperative Parotitis S Muller
134 Atypical Form of Paroxsmal Hemoglobinuria (Tilfælde af March hæmoglobinuri) A Sabroe

131 **Achylia and Anemia with Chronic Polyarthritis**—Borries quotes from recent textbooks which state that the internal organs almost always functionate normally with chronic joint disease Appetite and digestion keep good, except for the frequent tendency to habitual constipation This statement is the more remarkable, he says, because fully six years before Mering's 1913 manual, and even before Strumpel's were published, Faber and Lange had published four cases of achylia with chronic polyarthritis, and later had encountered it in 50 per cent of 28 cases and in 23 per cent of a still later series of 65 cases (1913) Anemia was evident in 9 per cent Borries' experiences confirm this frequency of disturbance in stomach functioning and blood production, as he relates in detail In chronic polyarthritis (gonorrheal or syphilitic origin excluded) in 84 patients under 50, achylia was pronounced in 30 per cent Including the 21 patients between 50 and 60, the proportion was 37 per cent These figures become more significant when it is learned that the achylia was found in 15 per cent of the 40 cases in which the joint trouble was of less than two years' duration, in 33 per cent of the 39 of up to eight years'-duration, and in 60 per cent of the 15 of from eight to thirty years' duration Achylia thus was evident in 30 per cent of the total 94 cases Anemia was evident in about 20 per cent , it is secondary but may reach high proportions

133 **Postoperative Parotitis**—Eleven cases are described by Muller who emphasizes the necessity for evacuating massage if pus is found in Stenson's duct, as this indicates an ascending affection If no pus emerges from Stenson's duct on light pressure of the parotid gland and its outlet, massage is contra-indicated—there being then no reason to suspect metastatic parotitis In one such case the primary trouble was in the scapula and the parotid swelled but no pus could be expressed Finally, after four days, pus emerged but the patient then was practically moribund from pyemia The duration of the parotitis in the other cases treated with massage was from three to eleven days, and no phlegmon developed in any instance In the 5 cases in which massage had not been applied, a phlegmon developed in two, and the process lasted over three weeks in 2, for eighteen days on the right and fifteen days on the left side in one case, but in another case the whole trouble subsided harmlessly in five days under moist heat.

Ugeskrift for Læger, Copenhagen

October 7, LXXVII, No 40, pp 1571 1598

135 Roentgen Treatment of Metrorrhagia and Fibroma, Sixty Cases H J Panner and S Kjærgaard

October 14, No 41, pp 1599 1638

136 Striking Benefit in Pernicious Anemia under Kefir (Om Anvendelsen af Kefir ved Anæmia perniciosa) S Kemp

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MAGIC AND MEDICINE *

FRANCIS CARTER WOOD, M D
NEW YORK

It is a pleasant academic custom, established of late years in this school, that the incoming students shall be welcomed, not only by the president of the university, but also by a member of the faculty, through the medium of an address, fortunately somewhat delimited as to time, usually devoted to some general aspect of medical practice or to some phase of the contributary sciences This year the honor has fallen upon me, and I purpose to use the opportunity to call your attention to an important aspect of human psychology which has existed as long as the human race itself—was, indeed, fully developed before medicine as such was divorced from religion—but now remains chiefly as one of the subconscious vestiges of the mind—a spiritual remnant, quite as in the body we still find vestiges of the gill-slits inherited from our far-distant ancestors who swam about in some primeval sea And just as these branchial clefts and arches remind us of our lowly anatomic origin, so, also, do the mystical yearnings of the mind point back to a period when the cave-man looked out upon a world full of terrifying portents, which, his spiritual advisers, after proper incantations, warned him could be overcome only by suitable offerings to the gods

An examination of the relations between magic and medicine during that early period, although of great anthropologic interest, we must of necessity pass over, turning instead to our own day, to this complex and puzzling age which we so fondly think is governed by the cold light of reason, and in so doing we must, to paraphrase Spinoza, be most careful not to laugh at the actions of mankind, not to groan over them, not to be angry with them, but to try to understand them

A full century has passed since Waterloo marked the freedom of Europe from the militaristic domination of Napoleon, and offered to man that liberty of thought and action which was acclaimed by all but a few reactionaries as enabling each to accomplish what had before seemed impossible the releasing of all individual energies for moral, social and scientific achievement And what has not that century of supreme and united effort brought forth! Today we boast such freedom for the soul that no one knows quite what to believe, and so believes that which he prefers, so definite and final a code for moral action that the minds of the people of this country oscillate between peace at any price and war at any cost, such widespread brotherly love that never since the world began have in one short year so many men fought face to face and laid down their lives with unimaginable heroism for what they thought a duty Never have the benefits of human culture and efficiency been so perfectly demonstrated on a recalcitrant world by bayonet thrusts and shrapnel The marvelous developments of chemistry are far less clearly shown in the synthesis of useful dyes and healing drugs than in the ability conferred on mankind to destroy his fellow creatures by suffocating gases or by liquid fire of such exquisite potency as to make death from that used by the somewhat illiterate and incompetent Greeks almost a pleasure, and to cause Torquemada to blush with envy

Nor have we been willing to confine the blessings of this modern civilization, born of the new freedom, to our own people, but have generously, and occasionally forcibly, conferred them upon other and more benighted races, so that today no Chinaman need suffer for lack of opium, no South Sea Islander be denied his alcohol and syphilis, no Indian but can enjoy, with some slight restrictions, the commingled benefits of whisky and tuberculosis

With such a record can any one deny that the human race is approaching spiritual perfection? Has not our own country set the pace? Have we not more universities than any other, even though certain safely endowed cynics *do* call attention to the annoying fact that some institutions still confer their Ph D degrees *in absentia,* after only a moderate amount of correspondence and the receipt of a small fee? Have we not more popular, if somewhat superficial, education than any other country in the world? Do we not show the wonderful results of civilization in that we manufacture more pig iron, mine more coal, send more telephone messages, consume more "patent medicines," than any other?

In response to this revaluation of all values, medicine too has risen from its humble beginnings in priestly incantations, to a point where its leaders declare it to be a science and no longer simply an art Today we smile at the cautery and boiling oil of a surgery of bygone ages, for now the burns of radium and Roentgen rays, in virtue of their magic qualities, have, as Sganarelle has said, "changed all that" The mere mention of the prescriptions of a Malay magician, embracing scorched cat's whiskers and other equally valuable remedies, brings a smile to the face of the recent hospital graduate who prescribes from a sample package of the latest synthetic drug from Germany, just left at his door by the postman and proved to be of the highest value, because, first, the advertisements says so, and, second, it has been tested on ten dogs and twenty rabbits—a much more scientific method than trying it on man The fortunate patient also escapes the bad tasting mixtures of his childhood and knows that his physician is progressive and ahead of the times, since no article commending the drug has as yet appeared in the monthly magazines

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* An address delivered at the opening of the College of Physicians and Surgeons Columbia University New York, Sept 29 1915

What country lad, suffering from that digestive remorse which so often follows an assault on a neighbor's apple tree, but would appreciate the modern improvement over castor oil and minted ginger, to be found in psychotherapy or even the Emmanuel movement, or, if willing to stray from the straight and narrow path of regularity, would not prefer absent treatment from a Christian Scientist or manipulation by an osteopath?

What pious spinster but would acknowledge the glories of modern therapeutic achievement in the discovery which enables her to enjoy in the innocuous form of a widely advertised tonic her daily or thrice daily cocktail, and still remain a zealous and esteemed member of the W C T U?

From these serene heights of scientific medicine we can well afford to treat with contempt such unfortunate aphorisms as that attributed to the greatest of medical comedians "The only thing the matter with the quacks is that they cure so many people," and to regard with satisfaction the ominous gloom which has suddenly snuffed out the literary light who composed that libel on the medical profession, "The Doctor's Dilemma"

Yet sometimes this wonderful science of medicine does not seem to be a wholly satisfactory guide You, as future practitioners of medicine, have still before you the pleasure of dismissal from the care of some small patient on whom you have spent all the scientific acumen with which your teachers will endow you in the next four years, because in grandmother's day it was not necessary to make such a fuss about baby's milk "All of her children, and she brought up ten, took milk straight from the cow, and nobody ever thought of modifying it" And when after you have in desperation told the mother of the next small hopeful that it will be enough just to put a little lime water in the bottle, and have been promptly displaced by Dr Blank, who is "so much more intelligent because he knows exactly how many calories each bottle contains," it will be small comfort that you are perfectly well aware of the fact that Dr Blank never heard of a calory until a few weeks before, and thinks it means something about germs When you have been replaced because you listened to grandmother's chest with your ear, showing that you knew nothing of modern medicine, or supplanted because you did use the offending instrument, showing that you must have bad hearing and really could not know that she had pneumonia from your knowledge of her constitution, when, as I say, all these things have happened, you may begin to wonder whether there is not some defect in your medical education Then, when you see the street in front of the house of Dr Blank, whose medical standing is questionable, but of whose financial ability there is no doubt, filled with the automobiles of the rich who are taking the latest sure cure for cancer or tuberculosis or having their souls analyzed by the newest method, which "feels just like the confessional and reveals such awful things in one's past, but must be all right because there was a long article about it in the September *Century Magazine*," it will be slowly borne in upon you that there must be some things not taught in the curriculum

And what is the foundation for all this lack of appreciation of the last word of medical science? We must apply a sort of freudian analysis to the collective mind of the community, and in so doing it is extremely important that we remember the changed conditions of thinking which have come over medicine, for to these is due some of the present condemnation of the profession In the older days all possible facts on which to base a diagnosis were obtained by talking with the patient or his family, and by making a simple—usually a very simple—examination of such portions of his body as were visible without removing more clothing than was conventionally considered to be within the limits of modesty The discussion of such facts between a physician and a consultant, and even the mental processes by which the diagnosis was reached, bore largely on matters with which the patient and his family were familiar, and the only way in which the practitioner could gain the desired effect of great wisdom was by concealing his method of reasoning and the nature of the medicine prescribed The more ignorant he was, the more obscure were both Hence, the further back we go in the history of the art of medicine, the more mystical the methods of diagnosis, the more complex and fanciful the drugs

Nowadays, no attempt is made by the intellectually honest physician to obscure the methods of diagnosis, or the results of the scientific reasoning, nor is there anything mystical in the treatment We sift the testimony of the patient and his friends in the light of the known untrustworthiness of human evidence and ask that a large portion of the diagnostic information be written records obtained often by chemical or biologic methods beyond the manipulative skill of the physician himself The stress so often laid on such records has led the patient of today to feel that if he has access to them he can make as good a diagnosis as the physician Indeed, it is not uncommon to have one of the modern, highly educated neurotics bring out a vast pile of analyses, sometimes so poorly done as to be of no value, lay them before the physician, proceed to inform the latter of the real condition from which he is suffering, and, then, if not flattered by instant approval leave for some more amiable and perhaps more worldly healer, but ultimately to form the material on which the quack fattens his bank account

Thus it is that a not inconsiderable portion of the community, especially those who have achieved success through their business ability, the while they glibly state that the physician is a fool in business, forget that the converse also may be true, and on the intellectual basis of a course in medicine obtained from the Sunday supplements of the daily press and a few popular magazine articles on the medical fads of the moment, pass judgment on the methods and results of medical art, which would be amusing if they were not so pitiful For none of these men would for a moment consider the investment, even of other people's money, in a business scheme of which they had so little fundamental knowledge as they have of the medical subjects they airily discuss The inevitable result of this superficiality in judgment, largely due, I believe, to the lack of thoroughness and mental discipline in our popular education is an underestimation of the real ability of the physician and an overemphasis on the practical value of surgery, both temporary phases certain to be adjusted in the course of time

And so we see as a consequence that in its search for something to satisfy its desire for magic, a something which the scientific physician no longer supplies, a portion of the public has turned in another direction which leads to Christian Science and osteopathy Each of these is singularly adapted to fill a mind of a certain type the first, because of its aura of religion, the second, through its appeal to the practical as "doing something" The era of indiscriminate pill-giving by the physician having passed, it is hard for a patient to surrender a considerable fee for mere advice — usually irritating because so evidently just, but a half hour's massage and manipulation have a real cash value, even if they do not cure all maladies The practitioners of each of these trades are well endowed with that insight into human nature to which the physician is often indifferent, and know how to supply that suitable atmosphere of mystery for which so many still yearn

Perhaps the public is not altogether at fault in its attitude toward some phases of medical practice, for an insidious form of higher quackery is not infrequently exhibited by a certain type of physician who through the use of a majestic array of instruments or reports of complicated chemical analyses, of the real import of which he is often ignorant, seeks to conceal his intellectual nebulosity and to impress his more desirable and wealthy patients with his scientific equipment, just as did the doctor of a generation past with a dusty microscope, never disturbed from beneath its bell-jar, or the quack of a still older period, so lovingly satirized by the Dutch artists, with his consultation room decorated with skulls and stuffed reptiles An appeal to magic all of this, though the modern chaser of diagnostic ichthyosauri may not see the connection Sometimes the patient does

A remarkable example of crowd psychology, affecting both the medical profession and the lay public and showing the appeal of the occult, was seen in connection with the Friedmann tuberculosis cure a few years ago The cure was exploited, apparently, by a syndicate which shielded itself behind the discoverer, who was probably perfectly honest in his belief that the bacterial cultures which he used had some value in the treatment of tuberculosis In Germany the remedy met a cold reception, but in this country, owing to the great advertising value of the daily press, to the pseudoscientific way in which the whole question was ventilated, even before Dr Friedmann's appearance in the United States, and to the opposition of the medical profession to the use of this secret remedy, considerable sympathy for Dr Friedmann was aroused, even among the intelligent, and there resulted a rather bitter feeling toward the medical profession as jealously preventing the public from benefiting by a marvelous discovery — somewhat as today the attitude of a portion of the press on the subject of "twilight sleep" is that the physicians have banded together to defraud the people of something valuable If the newspapers would only publish the facts behind all these affairs, the public would be quickly disillusioned, but cold facts are rarely of news value, and we must remember the retort of Charles A Dana to a young reporter who approached him with a news item concerning a man who had been bitten by a mad dog "That is no news," said Mr Dana, "go out and find a mad dog that has been bitten by a man, and we will give you plenty of space for the story" It is the sensational which appeals to the mass, not necessarily the true When once a sensation gets well under way, it is wonderful to see how it is reflected from one portion of the country to another, appearing again and again in more and more distorted form, until in the boiler plate page of the country weekly it finally loses all semblance to the original Until we realize that the vast majority of the people of this country read nothing but the newspapers, and have few opportunities for obtaining accurate information by word of mouth from physicians or informed laymen, we will not understand how merely printed matter can have such great influence The wildest newspaper statement is absolutely believed, and however shrewd the individuals may be, yet when gathered in a group or united by a common emotional topic they undergo that curious physical alteration which Voltaire, the first of the crowd psychologists, noted — their ears elongate And what would be rejected as nonsense by the individual is accepted by the crowd, which is swayed by self-interest or self-pity, or that love of the mysterious bequeathed us by our cave-man ancestors

Nor does the magic of a phrase stop at the crowd, it involves men of scientific training, and illustrates another aspect of mystery in the field of medicine Let me read you a paragraph from the report of the hearing before the Committee on Mines and Mining of the House of Representatives of the Sixty-Third Congress, Jan 19, 1914

> Radium goes further than surgery, like the blessed light from heaven above, bathes the part, throws its gamma rays, which are its active rays, into the part, acting on all the myriad microscopic cells like millions of microscopic knives to destroy them or like a lash to drive them back In other words, radium will not only do what surgery does but it goes beyond it and takes a class of cases which are utterly beyond surgery It has wonderful possibilities in chemistry and physics—marvelous possibilities One cannot let oneself dream about it

Of course this is emotionalism, not reality, but why does this man of education and culture speak in this way? What is there in this element radium which so warp's men's judgment that they tell only of successes and forget to mention the vastly greater number of failures to cure? First, there is its great rarity The human race has always treasured things difficult to find or to make, even if of little intrinsic value Then, in this new element, also, are centered a fascinating series of qualities, simple enough today to the physicist but still mystical to the public Radium gives off heat, its atom explodes into a heavy metal and a gas which bombards the walls of the container, it gives off rays which will pass through a foot of lead and take a shadow photograph on the other side of this dense mass of metal, it will burn the tissues just as the Roentgen ray burns, somewhat less rapidly and less effectively than a red-hot piece of iron, but much more quietly and mysteriously, since the burn does not appear for a week or more The writers of scientific papers even speak of the "magic power of radium," but magic only because we do not understand it, and when its physical qualities are fully understood we shall hear much less about the use of radium in the treatment of cancer For in spite of all the statements made in the daily press about the wonderful cures which radium produces, we know today that it will certainly cure only a very small number of cancers and will do nothing which cannot be done by surgery. The result of the furore and publicity is, however, that it is now not always possible to get patients to submit to surgery for the removal of a tumor, they are so anxious to be treated with radium. The farmer in the farthest New England hills, reading in his weekly paper that radium is a certain cure for all kinds of cancer, comes to town refusing operation which might save him, only to fall into the hands of the nearest quack who has a little powder in a tube.

Such is the power of the press, molding the uncritical opinions of the people in virtue of the mystical which it celebrates. This influence of the mystical affects us all. Do *you* refuse to open an umbrella in the house, or cross between the carriages of a passing funeral? Do *you* avoid going underneath a standing ladder, or knock on wood lest your boasting bring bad luck? Probably you do, not because you are superstitious, but because, as a witty friend of mine once said, when accused, he liked to be on the safe side.

And now we must pause, not for lack of further apt illustration, new examples of which will soon be furnished you from your own experience, but because the natural limitations of human attention must be respected, and drawing in the net, survey the catch, dealing leniently with the human frailties within. For are they not a part and parcel, obscure and stupid as they seem, of that yearning for a power and perfection beyond the mere limitations of the flesh, which has led men on for all time? Do they not represent a blind appeal to something superior and more permanent than human life itself, something not evident to the senses, too subtle for the balance of the physicist, not to be captured in the test tube of the chemist, capable of diversion to evil ends when exploited by the unscrupulous, of infinite power when used by the wise for spiritual development?

The remedy for the evils is simple enough — education. With the deepening of real knowledge comes intellectual charity, while a diminution in the sensationalism of the press and a corresponding increase in the clarity and honesty of such medical information as is suitable for the public, the really excellent educational campaigns now being conducted by physicians through the publications of medical societies and reports of public health officers, and the most effective propaganda of the American Medical Association and of certain publicists who have raised their voices against the widespread sale of quack medicines — all these will abate somewhat the density of popular ignorance. For it is our duty as physicians to lead in this intellectual reform by refusing to be limited by a narrow professionalism, both in education and in practice, and by entering more and more deeply into the life and problems of those for whom we care, to regain that position of intellectual leadership which some of our great predecessors held in virtue of the fact that they were, first of all, great men, and only secondly, accomplished practitioners of an ever-widening art. And it is with that suggestion that I welcome you to the study of the broadest of all professions, whose interests touch all sciences and to which nothing human is without value.

Laboratory and Clinical Examinations.—Not saving of time, or of thought, is the prim[illegible]y object of any diagnostic method of value, but the more com[illegible]lete and accurate knowledge of the patient's condition.—Geor[illegible]e Dock, *Journal of Laboratory and Clinical Medicine*.

HOSPITAL EFFICIENCY AS PRODUCED AND MEASURED BY A FOLLOW-UP SYSTEM*

ARTHUR A HOWARD, M.D.
Clinical Instructor, Department of Pediatrics, Harvard Medical School, Physician in Chief, Children's Department, Boston Dispensary
BOSTON

In the medical world no less than in business, efficiency has become a recognized essential attribute. We have but little use—and rightly—for the hospital which is not efficient. But just *what do* we mean by hospital efficiency? The term suggests to our minds a capable administrative board, a staff of skilled physicians, good team work and organization, and adequate and up-to-date equipment.

These *are* essentials to hospital efficiency. It is because of such standards that in the minds of the general public the word "hospital" is no longer synonymous with impending death.

Standards are, however, but relative. They must be constantly changed and raised to accord with advancement in medical knowledge.

Modern medicine, twentieth century medicine, includes in its scope not only the cure of disease but also the prevention of illness.

The children's medical department of the Boston Dispensary includes a hospital for children of twenty-five beds and an outpatient clinic receiving over 14,000 visits a year. We have believed that, especially in dealing with children, the best results can be attained only by safeguarding the health of the patient after discharge, and have included in our responsibility the medical supervision of the child beyond the hospital or curative period. To undertake this plan intelligently, or indeed to make any plans for the child's health, it is necessary to know more about the child, especially in regard to home and living conditions, than can be learned from hospital histories and physical examination. The Boston Dispensary Hospital for Children has therefore adopted the plan of having a member of the social service staff visit the home of each patient admitted to the hospital. The home environment as regards location, hygienic conditions, social and economic circumstances is noted. This information is obtained with the spirit and attitude of planning for the interests of the sick child and not as a "third-degree" probing into family and personal matters. As soon as the visitor has the home situation well in mind, a bedside conference is obtained with the physician who has had charge of and has studied the medical condition of the patient. The information each has obtained is collectively considered. The physician makes immediate use of the information obtained by the visitor in planning the length of time it will probably be necessary to keep the patient in the hospital. This often makes a decided difference in the methods of treatment employed, and often aids the physician to understand better the clinical picture presented by the patient.

The physician and the visitor, having the home and medical conditions in mind, then plan the course to be followed on the discharge of the patient from the wards.

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* Read before the Section on Hospitals at the Sixty Sixth Annual Session of the American Medical Association, San Francisco, June 1915.

If the home conditions are suitable, and the family is in a position to employ its family physician to supervise the convalescence of the case, the responsibility of the hospital is ended after the visitor has seen that the child is actually placed under the family physician's care

If the character of the case is such that long and close supervision is necessary, as for example a feeding case, and the patient lives at some distance from the dispensary, it may be referred to the nearest "milk station" or "well baby clinic" The physician and nurse at the station will then assume the responsibility for the baby's feeding, and the supervision of home conditions In other instances, as, for example, chronic heart cases, if the home conditions, as regards hygiene, etc, are favorable, the district physician of the Boston Dispensary and the district nurse may be asked to cooperate and to provide continued medical and nursing supervision in the home Other patients requiring continued institutional care may be referred to a suitable chronic or convalescent hospital

In other instances, the visitor and the physician work out what seems to be the best plan for the child, utilizing existing agencies, such as child placing and child helping organizations, for this purpose when indicated The visitor in each case sees that the arrangement is in actual operation before transferring her responsibility

The majority of the discharged patients are referred to the children's outpatient department of the dispensary When this is the plan adopted, the visitor, after studying the home problems and conferring with the physician in charge of the case while in the hospital, secures as far as possible suitable home conditions before the discharge of the patient from the hospital wards After discharge, the visitor is responsible for the first visit of the patient to the outpatient department, the responsibility after admission there resting with the outpatient department's follow-up system

The return and continued supervision of cases in the children's outpatient department of the dispensary is effectively secured by means of a visible file index, and follow-up visits by the social service department

The visible file index makes obvious the failure of any patient to return on the date specified by the physician in charge of the case A postal card is sent to the patients failing to return at the specified time, and if they then fail to return, the records of the cases are presented to the physician in charge, and he determines whether or not the condition of the patients justifies a visit to the home to insure their return or at least a report on the situation

Good team work between the follow-up system of the outpatient department and that of the hospital is rendered easy, as home conditions of patients admitted to the hospital are in many instances already known to the social worker All that is necessary in such cases is to carry out any new measures made necessary by the emergency of the acute illness and convalescence of the patient Whatever the disposition of the case, each patient, as far as possible, is returned at three months and one year for medical inspection by the physician having charge of the case in the hospital

The children's department of the Boston Dispensary introduced this plan of providing medical supervision and following up discharged hospital patients for several reasons The number of babies and children readmitted to the hospital because of reinfection, failure to convalesce properly, and intercurrent disease was extremely suggestive It was felt that it was a distinct loss in experience for the physician in charge of a hospital patient to terminate his knowledge of the case with the patient's discharge from the wards, with no opportunity to know of subsequent developments or end-results

It seemed unfortunate that the patient should lose entirely the personal touch with the physician familiar with the course of the acute illness It was felt that it would be of definite value if the patient could, whenever possible, benefit by a longer supervision and plan of treatment by the same physician

From a purely economic as well as a medical point of view, it seemed poor business to call on the resources of the hospital for the care of a patient, and secure good results, only to have in a short time the hospital again burdened with the expense of more hospital care for the same patient This pointed to a waste of effort and money that the efficiency man of any business would promptly criticize and attempt to remedy The physical condition of readmitted patients, and the history of the case between discharge and readmission suggested that unfavorable home conditions and improper management of the patient was, in some instances at least, responsible for the readmission This led to a study of the home conditions of patients admitted to the hospital in 1912 This study clearly indicated that the existence of unfavorable living conditions as indicated by clinical experience was a fact and not a mere theory Investigation of the homes of all patients admitted to the hospital disclosed conditions unfavorable to convalescence or continued health in 94 per cent of the cases In other words, without the knowledge obtained by these home visits and the measures taken to improve the existing conditions, the dispensary would have discharged 94 per cent of its patients into just the kind of environment that predisposes to readmission and unfavorable results

This rather disquieting discovery suggested that even more valuable information might be obtained by determining the effectiveness of the measures taken to remedy these unfavorable conditions as judged by the physical condition of the patients at three months and one year after discharge from the hospital, at the same time checking up the findings of the previous study as regards the existence of unfavorable home conditions Therefore, over a year ago, a system was adopted by which the condition of a child is ascertained and recorded, as a routine, three months and twelve months after discharge[1]

From May 1, 1913, to April 30, 1914, 245 infants and children were discharged from the hospital The illnesses responsible for the patients' stay in the hospital were about what one might expect A brief summary is given in Table 1

An investigation of the homes of these patients gave almost identically the same results obtained in the previous study Of the 245 cases, 230 (93 8 per cent) presented definite educational or home problems A brief summary of these problems is given in Table 2

These figures scarcely require discussion or interpretation They speak for themselves Whatever may be the conditions as regards other hospitals, the Boston Dispensary has a definite situation to meet Although fundamentally social, the problem obviously at once becomes medical The measures taken to remedy these unfavorable conditions must be based on medical knowledge of cause and effect It becomes an individual problem with each patient, to determine, from the physical condition of the patient and the character of the home, what changes are necessary or desirable to secure a good medical result

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[1] The blank forms used for this work will be sent to any one interested on request to the author at the Boston Dispensary, 25 Bennet Street, Boston

TABLE 1—ILLNESSES OF PATIENTS

Medical Illnesses	No	
Gastro-intestinal	58	
Respiratory	41	
Cardiac	19	
Congenital syphilis	10	
Genito-urinary	6	
Central nervous system	6	
Meningitis	5	
Pulmonary tuberculosis	5	
Infantile paralysis	3	
Scattered medical diseases	21	
		174
Orthopedic	26	
Surgical	25	
Nose and throat	12	
Eye	5	
Ear	3	
		71
Total	245	

TABLE 2—EDUCATIONAL AND HOME PROBLEMS

1 Educational		
Homes presenting educational problems (such as teaching care of child, hygiene, need of treatment of other illnesses in the home, need of further medical supervision of the child)		187
Homes not presenting educational problems		58
2 Family Problems		
Homes presenting family problems		218
Such as		
Acute poverty	29	
Bad home condition other than poverty	44	
Illness in home	43	
Inadequate care of child other than poverty and illness	23	
Illegitimacy	17	
Homes presenting no family problem		27
3 No educational or family problem		15

The positive findings in the case of the Boston Dispensary would indicate that other hospitals, even if more fortunate in the economic and social circumstances of their patients, can scarcely claim efficiency unless this phase of the patients' welfare receives attention

The following data appear to demonstrate two points

1 The conditions disclosed in the study of the children's home environment had a definite bearing on the progress made by the patients after leaving the hospital

2 The control of the patients through the follow-up system and the social service department was a factor in producing this progress

Of the 245 patients admitted to the hospital, the condition at discharge was well, 60 (25 per cent), improved, 122 (50 per cent), not improved, 21 (9 per cent), died, 42 (16 per cent)

Three months after discharge the conditions were well, 57 (23 per cent), improved, 103 (42 per cent), not improved, 14 (6 per cent), no record, 17 (7 per cent), died, 54, that is, 12 who were alive at discharge died within three months Ten of these deaths were due to conditions known to be hopeless at time of discharge

At one year after discharge the conditions were quite different, as will be seen from the following well, 119 (49 per cent), improved, 47 (18 per cent), not improved, 18 (7 per cent), no record, 1, died, 60, that is, 6 had died between three months and one year after discharge

It is certainly a striking fact that fewer children were well three months after discharge from the hospital than were well at the time of discharge The data point strikingly to the conclusion that the task of restoring and maintaining the health of the patient is far from completed on the discharge of the patient from the hospital ward It is to be borne in mind that these patients were all children mostly from poor homes and that about half were babies When this is taken into consideration, it is encouraging to note that of 203 patients discharged alive, only 18 died during the year after discharge, and 12 of these cases were known to be hopeless at the time of discharge Only 6 deaths were the result of intercurrent disease or unexpectedly unfavorable convalescence from the hospital illness

On the other hand it is highly encouraging to see the steady and substantial improvement as the year advances Of 103 patients recorded at three months as "improved," 49 were well at the end of the year, 45 were further and much improved, and only 9 were not improved Of 14 "not improved" at three months, 3 are well at the end of the year, 2 are improved, and 9 remain not improved At the time of discharge, 25 per cent were "well", three months after discharge, only 24 per cent, but one year after, 49 per cent

The decidedly improved standing at one year over the relatively poor standing at three months suggests that medical supervision and the measures adopted to improve unfavorable home conditions are producing, if slowly, desirable results

Ignorance may be bliss, but it certainly is not efficiency We must face the situation The Boston Dispensary already knew that conditions unfavorable to health existed in the majority of the homes of its patients An organized systematized plan for remedying these conditions and medically supervising the patient after discharge was carried out We know that home conditions were immeasurably improved We know that as the result of following up the patients, intercurrent diseases were seen by the physician early and that unfavorable convalescences were given medical attention We have tabulated our results If these results in spite of our efforts are not as satisfactory as we might wish, we hesitate to hazard a conjecture as to what the results would have been had no effort been made to safeguard the health after discharge from the hospital Knowing the facts, knowing the difficulties, knowing where we have fallen down, are the first steps toward formulating effective measures to combat these difficulties and secure better results

More study and a more accurate knowledge of the deleterious influence of environment on the convalescence, in predisposing to intercurrent disease, in preventing normal development and health are extremely desirable. How can we more readily secure this information and measure the results of our methods of remedying conditions unfavorable to health than by a follow-up system which includes the investigation of home conditions, the medical-social education of parents and medical supervision and periodic inspection? To be of real value, this system must apply to all cases, not to occasional or selected cases, it must be a continuous part of the hospital routine, and, finally it must not be merely a negative factor, finding out the patient's condition at periodical intervals after discharge, but a positive factor, exercising control over conditions. The cost of such a follow-up system adds only one tenth to our hospital budget.

Prevention is cheaper than cure. If we can by means of a follow-up system determine and measure our problems and secure results, this cost should be turned into actual saving to the hospital by decreasing the number of readmissions.

Does not our knowledge of preventive medicine and such clinical experience and statistical evidence as this study discloses indicate that a follow-up system to show problems and secure and determine results is an essential part of the equipment required to produce and measure hospital efficiency in its twentieth century interpretation?

THE EXPERIMENTAL TRANSPLANTATION OF THE EPIPHYSIS

WITH OBSERVATIONS ON THE LONGITUDINAL GROWTH OF BONE *

S. L. HAAS, M.D.
SAN FRANCISCO

No subject in bone surgery has been so extensively investigated during the last few years as has that concerning the transplantation of bone. As a consequence of these studies certain of the resulting changes that take place after transplantation have been solved but there is still lacking a uniform agreement relative to some of these processes. From the clinical standpoint, however, there is a universal acceptance as to the successful applications of bone transplantations. Thus for the filling in of a bone defect, for the curing of a pseudo-arthrosis, for the producing of an ankylosis of the spine or the joint, and for the correcting of a nasal and other deformity, the transplantation of bone serves a very definite purpose. In all of these conditions a piece of diaphyseal bone with its periosteum is selected for the transplantation material.

From a practical standpoint it is not absolutely imperative that a transplant remain entirely alive and its cells be capable of proliferation, although if it possess these properties it is more likely to be successful. If it be demanded, in addition to the mere passive function of filling in a defect or acting as a framework for the ingrowth of neighboring bone, that the transplant must also possess the active property of increasing in length, within itself, then it is absolutely essential that its cells remain alive and be capable of dividing and extending in a linear direction.

As the longitudinal growth of bone is due to proliferation of the tissue at and adjoining the epiphyseal cartilage, it is necessary to include that part of bone in a transplant when an increase in length is desired. It is not alone sufficient that the cells of the part remain alive after transplantation, but they must retain their ability to multiply in such a manner as to further increase the length growth. In such a case there is an additional requirement of the transplanted tissue besides the mere supporting property of diaphyseal bone. This additional requirement demands that the tissue retain the active function and inherent property of the normal epiphysis to increase the length of bone. The epiphysis is to be considered as a highly specialized tissue which will undoubtedly respond to the general laws of regeneration and transplantation, in that the more highly differentiated the tissue and the more dependent on its blood, vascular, lymphatic and trophic nerve supply it be, the less likely is the possibility of the successful transplantation of that particular tissue. On the independency of the epiphysis to withstand these losses depends its functional transplantability.

It is surprising that this interesting and complex subject has not been more extensively investigated. Aside from the scientific problems connected with such a study there are offered numerous opportunities for clinical applications of a successful method. Instances of such possibilities are found in cases of destruction of the epiphysis following tuberculosis and acute infection of the bones in early childhood, in certain neoplasms necessitating the removal of the epiphysis, in congenital shortening of the limbs, in defective growth after infantile paralysis, in destructive traumatic injuries of the epiphysis, in rachitis, and in congenital dislocations of the hip. Since the reports of transplantation of joints by Lexer, Kuttner and others, it would be very important to know the behavior of the epiphysis after transplantation before attempting such procedures on growing individuals.

From the optimistic conclusions of Rehn and Wakabajashi[1] in 1912, one would be entirely justified in attempting to perform the transplantation of the epiphysis in order to correct any of the above-mentioned conditions when there was loss of the function or the destruction of the epiphysis. These investigators performed homoplastic transplantations on two months old rabbits of the same brood, using the upper end of the radius including the epiphyseal cartilage. They concluded from their experiments that the epiphyseal cartilage after homoplastic transplantations retains its full life properties, showing no evidence of degeneration, and from the very first took over the function of its resected predecessor. These conclusions cannot be accepted without comment, as they were drawn from experiments in which the proximal part of the radius was transplanted, the epiphysis of which shares only a small part in the production of the length growth and therefore a failure of its functions would not be very noticeable when compared with the marked activity of the distal epiphysis. They have relied entirely on a comparison of the roentgenograms of the two feet which were only taken at the conclusion of the experiment in order to determine the variation in growth. As the place of union was evident in

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* From the Pathological Laboratory and the Surgical Pathological Laboratory of Leland Stanford Jr University School of Medicine.

* Read before the Section on Orthopedic Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

[1] Rehn E. and Wakabajashi: Die homoplastische Transplantation des Intermediärknorpels im Thierexperiment, Arch. f. klin. Chir., 1912, xcvii, 1.

their experiments they could have easily determined, by means of measuring at the time of the operation and at conclusion of the experiments, whether or not the transplanted piece actually increased in length

In the same year appeared Axhausen's[2] experimental work in which he performed homotransplantations in young rabbits He used the lower end of the femur, thin sheets of epiphyseal cartilage, and patella, for his transplantation material and transplanted them under the skin He found that the greater part of the epiphysis died and that only that part remained alive which was situated beneath the perichondrium In the middle part of the epiphysis he noticed degenerated areas, and he claimed that ossification took place only in the cartilage that remained alive In these experiments there was lacking functional stimulation, and for that reason the results are open to criticism

The results of Axhausen's work were diametrically opposite to Rehn and Wakabajashi On the other hand, they agreed to a certain extent, with those of Enderlen[3] and Helferich[4] The latter investigators, who were the pioneer workers on this particular subject, performed experiments of epiphyseal transplantations as early as 1899 They reimplanted the epiphysis in rabbits, using the lower epiphyseal cartilage of the ulna with an adjoining piece of the epiphysis and the diaphysis Helferich, from the macroscopic findings, reported that the epiphyseal cartilage under favorable conditions need not lose its property of producing length growth A lessening of this property might be observed but there was not an entire loss Enderlen, who made the microscopic study of these preparations, reported that the reimplanted epiphyseal cartilage retained its vitality to a large extent In agreement with Axhausen he noticed that the best maintained were those parts near the perichondrium, while those at the center showed evidence of degeneration There was an increase in width of the epiphyseal cartilage due to an ossification coming from the living cartilage The ulna was retarded in growth and, on that account, caused a bending of the radius

Aside from the investigations of Zoppi[5] who found in his autotransplantation of the epiphysis a regular healing in and the formation of new bone, while in his heteroplastic transplantations there resulted a complete failure, and the studies of Galcarzi,[6] who found that there was a calcification of the epiphysis and loss of function in both auto and homotransplantation, there have been no other attempts to solve this problem prior to the beginning of the present work During the last year several additional articles have appeared and they will be briefly reviewed

Of these recent articles the first that appeared was by von Tappeiner[7] who performed reimplantations and homotransplantations on dogs six and twelve weeks of age, using the distal half of the metatarsal In his reimplantations he found that there was no disturbance in length growth even after six months, while in his homotransplantations he noticed a regular increasing shortening which was proportional to the length of time that had elapsed He emphasized the importance of early function, and states that the younger the animal the less the amount of shortening From his homotransplantations he concluded that for clinical applications the transplantations of the epiphysis is unsuccessful

A short time later there appeared an extensive article by Obata[8] who performed on rabbits reimplantations, autotransplantations and homotransplantations of the entire metatarsophalangeal joint with either a part or an entire metatarsal and phalanx In some experiments the transplants were made from the dead animal either with or without keeping for a time in salt solution He also repeated the experiments of Rehn and Wakabajashi by transplanting the head of the radius from one animal to another In his conclusions he stated that there was more or less shortening in all the cases, but that it was most marked in the homotransplantations A bony union occurred in all the experiments except in homotransplantations, in which condition a pseudo-arthrosis resulted In homotransplantations of the head of the radius he found only a slight degree of shortening He does not agree with Rehn and Wakabajashi that this transplanted epiphysis functionated, but ascribes the evening up of growth to more extensive proliferation of the distal epiphysis In the transplantations from the dead animal he noticed no evidence of growth and found with one exception that a pseudo-arthrosis occurred

The next article that appeared was by Heller,[9] who carried out reimplantations of the distal epiphysis of the radius and ulna as well as homotransplantations between related and nonrelated rabbits He also made a few reimplantations and autotransplantations in goats He reported that the epiphysis did not keep up its normal length growth in any of the forty-five experiments in which the epiphyseal cartilage was transplanted in the form of half joints The least amount of shortening took place in the reimplantations, while a greater degree occurred in homoplastic transplants, most marked in the nonrelated animals In homoplastic transplantation he believed there was a complete cessation in function of the epiphysis, and he ascribed all growths to the nonoperated proximal epiphysis From his experience with goats, because of the more marked degree of shortening, he concludes that the larger the transplant and the greater the size of the animal, the more marked will be the shortening In concluding, he said that in autotransplantations there was a lively regeneration of the epiphyseal cartilage from the perichondrium and that a not inconsiderable amount of bone apposition could be recognized, but nevertheless the bone growth remained checked and could not be utilized for practical purposes, especially so in cases of homotransplantations He thinks that the most favorable conditions for the transplantation of the epiphyseal cartilage would be in the form of a thin sheet without adhering bone particles, so that it could come more directly in contact with the nourishing fluids of the body In a postscript he added that in his more recent experiments on two months old animals, in which after autotransplantations of the epiphyseal cartilage in the form of very thin sheets, he found almost a normal growth The exact details of these experiments are not given, so one cannot conjecture on the cause of the variations from his previous results

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[2] Axhausen, G Ueber den histologischen Vorgang bei der Transplantation von Gelenkenden, insbesondere über die Transplantationsfähigkeit von Gelenkknorpel und Epiphysenknorpel, Arch f klin. Chir, 1912, xcix, 1

[3] Enderlen Zur Reimplantation des resecirten Intermediärknorpels beim Kaninchen, Deutsch Ztschr f Chir, 1899, li, 574

[4] Helferich Versuche über die Transplantation des Intermediärknorpels wachsender Röhrenknochen, Deutsch Ztschr f Chir, 1899, li, 564

[5] Zoppi Quoted by Rehn and Wakabajashi, Note 1

[6] Galcarzi Quoted by Rehn and Wakabajashi, Note 1

[7] Von Tappeiner, Fr H Studien zur Frage der Transplantationsfähigkeit des Epiphysenknorpels und des Gelenkknorpels, Ztschr f d ges exper Med, 1913, i, 491

[8] Obata, K Ueber Transplantation von Gelenken bei jungen Tieren mit besonderer Berücksichtigung des Verhaltens des Intermediärknorpels Beitr z. path Anat. u. z. allg Path, 1914 lix 1

[9] Heller Experimentelle Untersuchungen über die Transplantation des Intermediärknorpels in Form der halbseitigen Gelenktransplantation Arch f klin Chir, 1914, civ, 843

The most recent article is by Minoura[10] on the transplantation of metatarsophalangeal joints of two months old rabbits into the soft tissues Either the whole or half joint that was either intact or split longitudinally was transplanted into the back, subcutaneous tissue, liver, or abdominal cavity of the same or different animal In some instances the joint was placed in a Ringer's solution before transplantation or was removed from a dead animal He observed that the transplanted joints became encapsulated after one or two weeks The healing always appeared the same whether it was in the abdominal cavity, subcutaneous tissue, liver, or the muscle The longitudinally split half joints underwent quicker organization than the unsplit and resorption took place more rapidly when the parts were allowed to remain in Ringer's solution He concluded that autotransplantation was superior to homotransplantation and that the substitution processes were more active, quicker and intense, and that autoregeneration was more significant and continued for a longer period Not much difference was noticed between transplants from the dead or from the living animal In no case after transplantation, even in autotransplantation, was there any regular growth of the epiphyseal cartilage (only an irregular proliferation was found in the periphery) and in no case was there a lengthening of the transplanted joint In comparing these experiments with those in which the transplantations were made into bone defects, it was noticed that the new formation was less evident, the degeneration appeared earlier in the new-formed tissue, and the resorption played a greater role, as in these cases the functional requirements of the respective tissue was lacking

The prevailing opinions of these investigators indicate that the epiphyseal cartilage after transplantation loses more or less of its power to proliferate and thereby to increase the length of bone In general they found considerable growth in reimplantations, less in autotransplantations, and practically none in homotransplantations The greater the variations in the species the greater will be the growth disturbances None of the authors agreed with Rehn and Wakabajashi in that there was no disturbance in growth after homotransplantation of the epiphysis

All of the seventy-five experiments of this series were performed on dogs, the same animal often being used for two or more observations

The majority of the animals were from one and a half to four months of age at the time of operation In some animals the ages were not definitely known They showed a definite growth after operation, but the metacarpals had not changed in length This paradoxical condition can be explained by assuming that growth ceases in the metacarpals before it does in the longer bones

The metacarpal and metatarsals were selected because they possessed but one epiphysis situated at the distal end of the bone and any growth which occurred could only be ascribed to proliferation at that particular epiphyseal cartilage These bones were also easily measured at the time of operation and any change in length could readily be determined at the conclusion of the experiment Another advantage in using these particular bones is that the adjoining bones serve as a natural splint

METHOD OF OPERATION

All of the operations were performed under general ether anesthesia The extremity was shaved and painted twice with tincture of iodin and the operation carried out with the usual aseptic technic

The incision was made on the dorsal surface of the foot and special precautions were taken in order to preserve the normal vascular and nerve supply to that particular region

In removing the segment to be transplanted special care was exercised so as not to injure the epiphyseal cartilage In the very young animals a sharp knife was used, while in the older animals a small saw was necessary to sever the bony connections of the transplantation material

The small transplants were anchored in place by means of an X-shaped silk suture, while the larger pieces were reinforced by an additional suture passed through the cortex of the diaphysis of each fragment The total length of the operated and adjoining bones, also the removed and implanted segments were carefully measured The wound was closed in layers and the foot encased in a plaster dressing, which was removed in from fourteen to twenty-one days The animal was allowed its freedom from the start Primary healing resulted in all but two cases

At the conclusion of the experiment a roentgenogram was taken of the corresponding two feet Then the foot was dissected and measurements made of all the metacarpals of both the operated and the normal foot One half of a longitudinal section was preserved in Kaiserling's solution and the remaining part placed in Orth's fluid for further study

It will be possible to give in this paper only the observations of the changes in growth following the various operative procedures

In the interpretation of the results certain standards of comparison have been adopted in order to determine the various changes The two inner metacarpals have been found from repeated observation on normal extremities to be of equal length or within 1 mm of each other It has also been noticed that the corresponding bones of each foot are practically of the same length Thus there is a definite standard of comparison by means of which any change in growth may be calculated

EXPERIMENTS

The following sets of experiments were performed

1 Reimplantation of an entire metacarpal or metatarsal In these experiments the entire bone with its articular surfaces and periosteum intact was raised from its position and immediately replaced Table 1 shows the results

Conclusion After reimplantations of entire metacarpals or metatarsals, in growing animals, there is complete cessation of the growing function of the epiphysis

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[10] Minoura M Studien über Gelenktransplantation (inkl Intermediarknorpel) in Weichteile Frankfurter Ztschr f Path, 8 1914 xv 397

TABLE 1—REIMPLANTATION OF AN ENTIRE METACARPAL OR METATARSAL

Number		Age Mos	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm	Remarks
1	E2	5	52	3 05	3 15	0 1	0 7	
2	E2	5	52	3 15	3 3	0 15	0 7	
3	E3	5	208	6 3	3 2	—0 1	0 4	
4	E3	5	208	6 3	3 2	—0 1	0 4	
5	E4	3 5	113	3 65	3 6	—0 05	2 95	
6	E4	3 5	113	3 65 cut	3 7	0 05	2 75	Incised
7	E5	7	107	5 5	5 2	—0 3	0	
8	E6	4	298	5 6	4 9	—0 6	0	
9	E6	4	298	5 6 cut	4 9	—0 7	0	Incised
10	E13 R	Old	115	Not taken Growth ceased	Not taken	0	0	
11	E13 L	Old	115	Not taken Growth ceased, cut	Not taken	0	0	Incision, shows degen

TABLE 2—AUTOTRANSPLANTATION OF AN ENTIRE METACARPAL OR METATARSAL

Number		Age Mos	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm	Remarks
1	E1	5	109	6 9 cut	1 5	—5 4	0	*Cut off end*
2	E1	5	109	6 9	6 6	—0 3	0	
3	E17	9	36	6 7 cut	6 1	—0 5	0 3	*Long incis at both ends*
4	E8	6	91	6 7 right	6 8	0 1	0	
5	E8	6	91	6 7 left	6 4	—0 3	0 2	
6	E10 R	3 5	89	4 8 cut	4 3	—0 5	0	Incision, showed evidence of degeneration
7	E10	3 5	89	4 8	4 3	—0 5	0	

TABLE 3—REIMPLANTATION OF SPLIT METACARPAL OR METATARSAL

Number		Age Mos.	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Operated Bone Cm	Remarks
1	E9	?	31	5 7	5 6	—0 1	0	
2	E14-6	4 5	237	5 9	5 8	—0 1	0	Consid change in marrow
3	E15	6	38	5 8	5 8	0	0	
4	E18 2	6	223	6 05	3 3	—2 8	0	

TABLE 4—AUTOTRANSPLANTATION OF SPLIT METACARPAL OR METATARSAL

Number		Age Mos	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm	Remarks
1	E12	Very old	235	?	6 1	—0 2	0	Incised degen
2	E17 R	6	36	6 7	6 1	—0 6	0 4	Incised end necrotic

TABLE 5—REIMPLANTATION OF THE EPIPHYSEAL CARTILAGE

Number		Age Mos	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm
1	E14 6	4 5	37	5 9	5 7	—0 2	0
2	E23 13	1 5	23	3 9	4 1	0 2	0 4
3	E24 14	?	4	3 6	3 8	0 2	0
4	E33 44	1 5	43	2 7	2 8	0 1	0 7
5	E38 26	4 0	55	4 4	4 2	—0 2	0 1
6	E41 39	5 0	43	4 55	4 5	—0 05	0 5

TABLE 6—AUTOTRANSPLANTATION OF THE EPIPHYSEAL CARTILAGE

Number		Age Mos	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm	Remarks
1	E9 4	?	86	5 1	5 0	0	0	
2	E10 5	3 5	89	4 8	4 5	—0 3	0 1	
3	E15 7	6 0	38	5 8	5 9	0	0	Piece inserted was 0 75 mm wider than that removed
4	E23 13 R	1 75	23	4 0	4 2	0 2	0 6	
5	E23 13 L	1 75	23	3 6	3 8	0 2	0 4	
6	E32 39 R	1 75	136	2 5	2 85	0 35	1 4	
7	E32 39 L	1 75	136	2 55	2 9	0 35	1 4	

2 Autotransplantation of an Entire Metacarpal or Metatarsal An entire bone was transplanted from one foot to another foot of the same animal Results are given in Table 2

Conclusion The transplanted bones not only failed to grow, but showed definite evidence of degeneration and decrease in length

3 Reimplantation of Split Metacarpal The reimplanted bone was divided longitudinally and reinserted Results are given in Table 3

Conclusion As these animals had reached the end of their growing period no observations can be made on the disturbances in growth lengthwise Some of the bones showed definite evidence of absorption and decrease in length

4 Autotransplantation of Split Metacarpal or Metatarsal Before transplanting to another foot the bone was split longitudinally Results are given in Table 4

Conclusion In the single observation in this group in which the animal showed evidence of growth in the normal bones there was a definite decrease in size of the transplant, showing that the splitting of the bone had no favoring influence on the viability of the epiphysis

5 Reimplantation of the Epiphyseal Cartilage In this series of experiments the epiphyseal cartilage, including a piece of adjoining epiphysis and diaphysis was excised and immediately reimplanted Table 5 gives the results

TABLE 7—REIMPLANTATION OF VARYING LENGTHS OF THE EPIPHYSEAL END OF THE METACARPAL AND THE METATARSAL BONES

Number	Age Mos	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm
1 E5 1	5	107	Total 5 4, resected ½ piece 2 7	5 2	—0 2	0
2 E7	7	155	Total 7 4 resected ⅔ piece 4 4	3 7*	—3 7	0 3
3 E22 12	1 5	22	Total 4, resected ⅔ piece 2 55	3 9	—0 1	0 5
4 E30 38 R	?	13	Total 2 4 resected ⅓ piece 0 7	2 3	—0 1	0
5 E30-38-L	?	13	Total 2 4 resected ⅔ piece 1 8	2 5	—0 1	0
6 E31 36	1 75	17	Total 2 5 resected ½ piece 1 25	2 5	0 1	0
7 E33-44	1 5	44	Total 2 7 resected ½ piece 1 5	2 7	0	0 1
8 E34-43 L	1 5	115	Total 2 8 resected ⅓ piece 1 1	3 25	0	0 7
9 E34-43 R	1 5	115	Total 2 8 resected ⅔ piece 2 0	2 95	0 45	1.20
10 E37-40	2	38	Total 3 05 resected ⅔ piece 2 3	3 0	0 15	1 45
11 E38-26	4	85	Total 4 5 resected ½ piece 2 25	4 2†	0	0 3
12 E41 39	4 75	44	Total 4 4 resected ⅓ piece 1 8	4 3‡	—0 3	0
					—0 1	0 5

* Infection. † Bored holes—nonunion at operation ‡ Nonunion

TABLE 8—AUTOTRANSPLANTATION OF VARYING LENGTHS OF EPIPHYSEAL END OF METACARPAL AND METATARSAL BONES

Number	Age Mos.	Duration of Experiment Days	Measurement at Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm
1 E19 5	5 0	34	Total 5 6 resected ½ piece 2 5	5 65	0 05	0 6
2 E19 5 R	5 0	34	Total 5 6 resected ½ piece 2 6	5 6	0	0 6
3 F20-10 L	1 5	25	Total 3 6 resected ½ piece 1 8	3 6	0	0 5
4 E21 11	1 5	42	Total 3 8 resected ½ piece 1 9	3 7	0	0 6
5 E29 37 R	2	143	Total 2 6 resected ⅓ piece 0 7	2 75	0 15	1 15
6 E29 37 L.	2	143	Total 2 5 resected ⅓ piece 0 7	2 6	0 1	1 3
7 E35 41 R.	1 75	111	Total 3 0 resected ½ piece 1 55	3 0	0	1 6
8 E35-41 L.	1 75	111	Total 2 95 resected ½ piece 1 5	3 0	0	1 4
9 E36-42 R.	1 75	43	Total 2 8 resected ⅔ piece 2 1	2 9	0 1	0 55
10 F36-42 L	1 75	43	Total 2 9 resected ⅔ piece 2 1	2 95	0 05	0 6
11 E 0-37 L.	5 5	43	Total 4 3 resected ⅓ piece 1 8	4 2	0	0
12 E40-37 R Homo	5 5	43	Total 4 1, resected ⅓ piece 1 6	3 9	0	0 15

TABLE 9—TWO STAGE AUTOTRANSPLANTATION OF DIFFERENT LENGTHS OF THE EPIPHYSEAL END OF THE METACARPAL AND THE METATARSAL BONES

Number	Age Mos.	Duration of Experiment Days	Measurement at First Operation Cm	Measurement at Second Operation Cm	Measurement at Necropsy Cm	Growth of Operated Bone Cm	Growth of Normal Bone Cm
1 F16	9 0	89	Total 6 9 resected ½ piece 3 2	No second operation	6 9	0	0
2 F20 10	1 5	25	Total 3 5 resected ½ piece 1 9	Not taken union at first	4 0*	0 5	0 5
3 E21 11	1 5	42	Total 3 7 resected ½ piece 1 9	No second operation	4 3	0 6	0 6
4 E22 12	1 5	22	Total 3 9, resected ⅔ piece 2 85	No second operation	4 0†	0 1	0 4
5 E25 26	2 0	155	Total 4 resected ⅓ piece 1 9	Total? Resected piece 2	3 6†	—0 4	0 15
6 E26-27	1 5	64	Total 3 1 resected ½ piece 1 5	Total 3 7 Resected piece ?	3 85	0 75	1 6
7 F27 28	1 5	80	Total 2 9 resected ⅓ piece 1	Not taken	3 3‡	0 4	1 6
8 E28 29	1 5	67	Total 3 resected ⅔ piece 2 3	Total 3 7 Resected piece 3	3 9	0 9	1 5
9 E37 40	2 0	38	Total 3 resected ⅓ piece 1	Total 3 25 Resected piece 1 2	3 3	0 3	0 3
10 E39-41	1 75	46	Total 4 4 resected ⅓ piece 1 6	Total 4 4 Resected piece ?	4 25‡	—0 15	1 1

Died two days after second operation Nonunion at second operation. † Nonunion ‡ Nonunion first

Conclusion In none of these experiments was there an increase of more than 2 mm in length since the operation, while the normal bones showed as much as 7 mm of growth A difference of 2 mm in length is within the limits of error in measurement or lengthening due to failure of close approximation After reimplantation of the epiphyseal cartilage there is at first a slight increase in length while at a later period there is a decrease in length

6 Autotransplantation of the Epiphyseal Cartilage In these experiments the resected epiphyseal cartilage was interchanged with a corresponding piece from a bone of the other foot Results are noted in Table 6

Conclusion With the exception of two experiments there was no definite evidence of increase in size after autotransplantation of the epiphyseal cartilage In these two positive results the increase in size was very limited, being only 0 35 cm as compared with 1 4 cm of normal growth On section of the bones the epiphysis of the operated bones showed definite signs of degeneration, while the epiphysis of the nonoperated bones presented a normal appearance After autotransplantation of the epiphyseal cartilage its function to increase in a linear direction is entirely lost or only persists in a very limited degree

7 Reimplantation of Varying Lengths of the Epiphyseal End of the Metacarpal and Metatarsal Bones In this series of experiments one third, one half and two thirds of the epiphyseal end of the metacarpal was removed entirely from its normal bed and reinserted immediately in the same position Results are noted in Table 7

Conclusion In none of these cases with the one exception of Experiment 8 E 34-43 L, was there any evidence of increase in length growth The exact reason for the increase in this experiment cannot be definitely determined It is possible that for some special reason this particular epiphysis proliferated for a short time In the gross specimen there is no evidence of epiphyseal cartilage, so what growth occurred took place early and only for a limited time In view of the large number of negative results this experiment cannot be definitely considered as indicating an active functioning of the transplanted epiphysis Whether a long or short piece of bone was transplanted with the epiphysis was of no consequence as there was practically complete failure of the growth in every case Incisions or boring of holes into the bone seem to hasten the degenerative processes

8 Autotransplantation of Varying Lengths of the Epiphyseal End of the Metacarpal or Metatarsal These experiments differ from those of the previous group (7) in that the segment of bone was interchanged with a corresponding segment from the opposite foot Results are noted in Table 8

Conclusion There is a uniform failure of growth after autotransplantation of varying lengths of the epiphyseal end of the bones The normal bones show a marked increase in length Boring holes into transplants increases the degenerative processes

9 Two Stage Autotransplantation of Different Lengths of the Epiphyseal End of the Metacarpal or Metatarsal In this set of experiments the distal one-third, one-half or two-thirds was united to the proximal two-thirds, one-half or one-third respectively of the adjoining metacarpal or metatarsal After a sufficient length of time for union had elapsed a second operation was performed in which the distal segment was entirely separated from its surrounding tissues, thereby completing the autotransplantation Results are shown in Table 9

Conclusion In this set of experiments there was evidence of almost normal growth up to the time of the second operation, but after severing the epiphyseal end from its surrounding tissue there was a marked diminution in growth This shortening took place even when there was firm union with the normal proximal segment It was noticed that in cases where nonunion occurred that there was more marked disturbances in growth — even in the first part of the experiment Under these very favorable conditions for transplantation there was considerable diminution of the function of the epiphysis after transplantation

GENERAL CONCLUSIONS

1 From the practically uniform failure of increase in length of the bones after transplantation of the epiphyseal cartilage, either alone or with an accompanying piece of the epiphysis and diaphysis, both in reimplantation and autotransplantation, it must be concluded that epiphyseal cartilage loses its power to functionate after such transplantations

2 As the degenerative processes were more advanced in autotransplantation than in reimplantation, it can be almost certainly predicted that there would be a more marked degeneration in homotransplantation

3 Whether a small or large sized transplant was taken was of no consequence, as there was the same failure of growth in every instance Incisions into the periosteum or boring holes into the cortex hastened the degenerative processes

4 There was marked disturbance of growth following the two-stage autotransplantation, in spite of the fact that osseous union was secured before severing the epiphyseal transplant from its surrounding and nourishing tissues

5 The epiphyseal cartilage must be considered as a very vulnerable tissue, its viability being directly dependent upon its blood supply

Shreve Building

ABSTRACT OF DISCUSSION

Dr D B Phemister, Chicago The finding of Dr Haas that there is apparently no longitudinal growth through the epiphyseal cartilage after transplantation is very interesting One would expect cartilage to live if any tissue lives when transplanted, because it is nourished by a lymphatic instead of a blood vascular circulation Hyaline articular cartilage covering the ends of bones is frequently detached with or without a portion of underlying bone and becomes a loose body in the joint The bone cells, if any are present, always die and are absorbed, but the cartilage, receiving sufficient nutrition from the synovial fluid, remains alive indefinitely The deeper cells which have a columnar arrangement slowly undergo necrosis I have studied histologically ten or twelve such specimens of the various ages and have noted transformation of the superficial cartilage into fibrinous connective tissue in the older specimens In one specimen that had been free in the joint for ten years there was proliferation of the cartilage and a connective tissue capsule had formed The injury of the transplant resulting in disturbance of longitudinal growth might be either to the epiphyseal line or to the juxta-epiphyseal bone The small amount of longitudinal growth occurring in some of his experiments might possibly be accounted for by longitudinal growth in the shaft itself We see the shaft of a bone increase one-half an inch or more in length as a result of an inflammatory process, as syphilis or in osteitis deformans, where the epiphyseal lines are closed Consequently, there is no reason why in the absence of the normal process of longitudinal growth and where there is a great demand for it the cells of the shaft should not proliferate and increase the length of the bone

Dr. J T Rugh, Philadelphia I think the important lesson for us as practical orthopedic surgeons is the postponement of our operative work in this type of cases until adult life or until the expectation of any natural increase in growth is past I know in my own experience I have been sorely tempted at times to replace a very imperfect hip joint, in the case of congenital dislocation, or similar condition with the head of the fibula but have thus far refrained, and I shall continue to do so in the future The lesson I have learned from this experimental work of Dr Haas has been of enormous importance

Dr. Roland Meisenbach, Buffalo The work of Dr Haas, in my opinion, is of great value Although he has gotten some negative results, I think it touches on many things of value which will in the future give us a better understanding of one of the most important parts of the long bone, namely, the epiphysis It may also assist in giving us a better understanding of the function of the epiphysis I am particularly interested in this work because several years ago I did some research work on the chemical and mechanical stimulation of the epiphysis In this work, I had occasion to observe the epiphysis both microscopically and macroscopically in about two hundred rabbits In studying the epiphyseal and diaphyseal lines, it was interesting to see from the experimental work the close relation to the practical work, that is, the cases which we see daily that have interference of growth or which have stimulation of growth of the epiphysis This work is really the fundamental source of all fracture and bone-graft work. I would like to ask Dr Haas whether the transplant is divided from above or below the diaphyseal line. This will, I believe, change the results of the experiments materially In my experiments I was able to stimulate and retard bone growth depending on which part of the epiphyseal cartilage was attacked in the experiment I have a few lantern slides which I prepared for the Pan-American Congress which show sections of the epiphysis and epiphyseal line in different stages of stimulation That is, that by either toxic or mechanical means it is possible to cause more bone to form in the region of the epiphyseal end of long bones, as in my experiments with tibias or to almost cause an arrest of growth One slide shows that by means of toxic agents it has been possible to cause the entire epiphyseal line to close at a much earlier period by months than normally This explains, I believe, many of the cases which have focal infection at some part of the body that later on developed joint lesions, and in which the joints became deformed, also it explains the arrest of growth following fractures, and therefore I think that an attempt to transplant the epiphysis depends largely on the point from which we take the transplant and the technic employed

Dr S L Haas, San Francisco As Dr Phemister has mentioned, cartilage is a very resistant tissue. It is able to withstand a considerable amount of injury and is dependent on the surrounding tissues and fluids for its nourishment I have only studied a few microscopic preparations from these experiments and have found that the cartilage near the perichondrium remained alive It is possible that some of this cartilage may continue to proliferate, but I doubt if it would cause any decided increase in the length of the bone There is a distinction between growth in length and increase in size. It was noticed in some of these experiments that there was a marked swelling about the epiphyseal cartilage without any increase in length, showing that although there was cell growth there was no purposeful longitudinal increase like the normal epiphyseal cartilage. It was merely the regular cell division and multiplication which manifested itself by spreading in the line of least resistance. It was shown in the old experiments of Hunter and Duhamel that the longitudinal growth of bone takes place only at the epiphyseal ends In these experiments two pegs were driven into the diaphysis and in spite of an increase in length of the bone there was no change in the distance between the two pegs As to the increase in length following destructive osteomyelitis, it might be due to the general wild multiplication during the processes of regeneration, which, being unrestricted, spread in all directions

In regard to Dr Meisenbach's question as to whether the transplantation was made above or below the epiphyseal line, I presume he wishes to ascertain the relation of the incisions to the metaphysis, which is the most actively growing part of the bone In all the excisions of the epiphyseal cartilage a piece of adjoining epiphyseal and diaphyseal bone was removed so as not to injure that particular region Heller, in a postscript to his article, stated that he had succeeded in transplanting the epiphyseal cartilage in the form of very thin sheets of cartilage and that there resulted almost a normal growth He does not give the exact details of his experiments, but from the results of my experiments I am forced to entertain some doubt as to the correctness of his conclusions It is possible that by some special method he is able to get these good results

THE RELATION OF THE ROENTGENOLOGIST TO THE HOSPITAL*

H W VAN ALLEN, M D
SPRINGFIELD MASS

The reason for presenting a paper dealing with the relation of the roentgenologist and the hospital comes from the very great variation of such relation at present Were any one of the methods now in vogue approaching idealism, it would be shown by the number adopting such a method, while a study seems to show greater variation as time goes on My attention was first called to this subject by the investigation made by a state committee in regard to patients coming to hospitals under the Massachusetts workmen's compensation act This investigation showed no two institutions in the entire commonwealth making arrangements that could by any means be called similar In medicine a multiplicity of drugs recommended for a particular disease shows a competency of none, and so it is fair to suppose the roentgenologist and the hospitals have not yet found a satisfactory arrangement one with the other

The growth of the applications of the Roentgen ray is responsible for this condition When first given to the medical profession, it promised to be one of the most limited specialties The locating of dense foreign bodies and fractures of the bones of the extremities was its entire field Now I say without hesitation there is no broader specialty in medicine I cannot think of a single branch of the profession which does not call the Roentgen ray to its aid at times Any medical journal is proof of the wide scope of this specialty, and more than half the articles show the dependence placed on the ray, either in diagnosis or in treatment

The original roentgenologist was usually a photographer, electrician or a young and budding physician, hoping to use this as a stepping-stone to something more tangible It was the way this original work was done that to a certain extent is the fault of the present condition Many hospital superintendents and not a few physicians have failed to keep pace with the Roentgen progress and know the kind of man now required A competent roentgenologist must have primarily a good knowledge of medicine in its various branches, he must be well versed in general science, with special information in regard to electricity, and, furthermore, he must have a working knowledge of photography All these requirements being fulfilled, he must have the ability to acquire special acumen in interpretation of the shadow shown on Roentgen-ray plates This mental coordination of the shadows and placing the right significance on each is almost an instinct, and if one fails in this, all other qualities cannot make one a real roentgenologist Thus the roentgenologist must have combined medical, electric and photographic information to succeed

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* Read before the Section on Hospitals at the Sixty Sixth Annual Session of the American Medical Association San Francisco June 1915

Many serious operations rest entirely on the Roentgen-ray findings Why have less than the best skill in determining these findings? When the people come to know that their hospital treatment often rests on the Roentgen evidence found at entrance, they will select a hospital where this work can be best done They should know that the expense of maintaining the rapidly improving Roentgen-ray apparatus is great, and proper fees must be arranged A price per plate is the poorest way to estimate the cost, as the plate is the smallest item of expense Hospital managers should trust their roentgenologist to carry on the entire department, including the financial policy, or take time to make a more thorough and comprehensive study than many are doing at present

In writing this paper, I have had in mind more particularly the hospitals of 150 beds or less A paper written recently by Dr I S Hirsch[1] of New York has dealt admirably with the requirements of a large metropolitan hospital Many of the requirements of such a hospital do not, however, apply in the one with the number of beds just referred to In such hospitals it is not practicable to maintain a Roentgen staff, but one man with an assistant or two can make a creditable reputation for himself and the institution

The cost of equipping and maintaining the Roentgen-ray department of hospitals is constantly under discussion The rapid evolution of the Roentgen-ray machine has made changes necessary so often that up to the present time the money for instruments must come from other sources than the daily revenue of the department When such a time comes that no radically new type of instrument is required, this expense will immediately be materially lessened The cost of maintenance, however, except where the free bed system or outpatient department is very large, should be derived from the patients themselves

This brings us to the question of private patients' fees I maintain that they should be the same as in the roentgenologist's private laboratory, otherwise he would be a competitor with himself The division of this fee between the roentgenologist and the hospital will vary, of course The greater the skill of the roentgenologist, the larger his proportion It should always be kept in mind that it is the perfection in technic and skill in plate reading that is required, rather than the sale of so many plates made on an instrument costing so much Ordinarily, hospitals should not retain more than 25 per cent of the fee charged private patients to cover the overhead expenses Under few circumstances should the roentgenologist (who, I have said, should be a physician) sell his services at a fixed sum per year to a hospital It opens opportunities for practices which are not elevating professionally, and are a source of constant friction

The relation of the roentgenologist to the hospital staff is another question often discussed If he is a real roentgenologist, his place on the staff should be the same as that of any physician doing special work This place has not always been conceded him, owing in part to the confusion in the early days as to who should be a roentgenologist

His report should also be in the nature of a consultation rather than that of a laboratory report This report may be written, but I believe should be supplemented when possible by a verbal one, going into the various possibilities that may be recognized only by the roentgenologist in consultation with the clinician It is only in this way that the patient can get the full benefit of our professional skill The method of stated staff consultation is in vogue in Germany, and much of the diagnostic acumen of the Germans is due to this close relation into which the members of the staff are thrown

The necessity of the preservation of the finished plate is not recognized sufficiently by the vast majority of hospitals Too many times every one has access to them, and plates may be removed to be replaced at will or even not at all These plates are an accurate record of the condition of a patient at a given time, and in many cases cannot be duplicated A plate which, when taken, seems of ordinary moment may later become of the greatest value, either in treatment or medicolegally All should be preserved No one but the roentgenologist or his assistant should have the right of access to the files, and if for any reason plates are removed, they should be signed for and a record blank deposited in the place of the plate, showing who has taken it, and when it is returned, credit should be given for its return

The plate legally belongs to the hospital or the roentgenologist, and never to the patient He is entitled only to the information obtained from it, and given through his physician

A medicolegal aspect too little recognized is that the roentgenologist must identify the plate himself in court A medical man who simply borrows the plate to appear in court has evidence of no value He cannot under oath connect it in any way with the patient He did not see it developed, he has no mark on it which shows there was not an exchange made in the dark room, and moreover, he is not an expert in plate interpretation The roentgenologist should have full control of the plate library, demonstrating the plates when required

The method of preserving these plates hardly comes within the scope of this paper It will vary with the size and requirements, as teaching, etc It is a duty to the hospital, owed by the roentgenologist, to see that these plates are well preserved

My plea in this paper has been for a closer relation medically of the roentgenologist to the hospital, and for a recognition of his ability On his part, it is a duty to use his general medical acumen as well as his technical Roentgen information Also there is a necessity for his being in entire charge of the department, which should be well correlated in all its branches

19 Maple Street

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[1] Hirsch, I S Mod Hosp, January, 1915, p 11

ABSTRACT OF DISCUSSION

Dr. A. R. Warner, Cleveland: The Roentgen-ray department has become an important specialty of hospitals and it has gone beyond the stage of a novelty. It is an essential. The principle brought out as to diagnosis and the handling of diagnoses and information in regard to patients as expressed in the paper I am quite sure is correct. We have had some trouble with this matter on several occasions in Ohio and each time the courts have held as the paper expressed.

Dr. Joseph M. Spellissy, Philadelphia: Dr. Van Allen mentioned the possession of the plates. I think we all agree that the plate should belong to the hospital. Where a great many plates are made the storage and preservation of the plates has become a bugbear in a large institution doing a large amount of work, so that plates are destroyed within a year. I know at the University Hospital, Philadelphia, with which I am closely associated, they have a department of photographic records there in which I am interested in standardizing photographic records and also Roentgen-ray plates. I have made Roentgen plates myself. I presented this morning a Roentgen-ray tracing such as we use in St. Joseph's Hospital. The paper is either "onion skin" or what is called buff manifold paper. It is transparent. It has printed on it the date of taking the plate and then the roentgenologist makes a tracing of the plate on the paper and that paper is bound with the records of the patient, so that if the plate is destroyed it still remains of value to the physician or surgeon.

Mr. F. M. Nesmith, Oakland, Calif.: I would like to ask Dr. Spellissy if that record is accepted in court?

Dr. Spellissy: I do not know. It has been mentioned that a roentgenologist sometimes goes to court. The testimony I should think would be acceptable that that was his tracing of what he saw in the plate. Where a plate is produced itself I have known the most eminent roentgenologists to disagree in the interpretation, and they would throw out the testimony.

Dr. W. H. Walsh, Philadelphia: I do not believe that the roentgenologist of a hospital should be permitted to have anything to do with the financial policy of the Roentgen-ray department, this question being one entirely within the province of the management of the institution. There should be no question as to the desirability of consulting the roentgenologist in all questions regarding the equipment of his department, but when questions of cost are involved they must be finally decided by the administrator. I can see no more reason in permitting the roentgenologist or the pathologist to handle the financial policies of their respective departments than I do in allowing the visiting physicians or surgeons of the staff to meddle in the financial matters.

With respect to the question of the division of fees between the roentgenologist and the hospital, I must express my disapproval of such an arrangement, as I do not think they work out to the ultimate benefit of either of the principals. There is no good and sufficient reason why the roentgenologist or members of the staff should not be the recipients of salaries for their work, a procedure which in no way affects the dignity of their position nor which could prejudice their professional standing. Being opposed to the very proposition of dividing fees *any* division would be objectionable to me, but I am rather inclined to think that the hospital that only retains 25 per cent. of the fees received, supplying as it does the apparatus, supplies, electrical current and assistants, is not getting its due, and I should feel inclined to reverse the arrangement, allowing the roentgenologist 25 per cent. and the hospital 75 per cent., a more equitable division.

Dr. H. W. Van Allen, Springfield, Mass.: In Massachusetts, at least, tracings of plates are not admitted as evidence in court. The actual plate is the only exhibit allowed. Tracings may accompany the plates in an explanatory way, as they are much more easily understood by the jury. If a plate has been lost or destroyed the roentgenologist may state his best memory of the plate, but cannot introduce a diagram.

Of course I do not have as large a Roentgen clinic as Dr. Spellissy of Philadelphia, but in proportion our space is as valuable. We, however, keep our plates easily accessible until one year old and then they are taken to space less valuable in the hospital and permanently stored. This is a necessity, as frequently they are required for reference to note changes in chronic cases, as well as for teaching and for court cases, the latter not required at times for several years after the plate is made. One recently was required after an interval of seven years.

In regard to the financial part, I believe it should be under the roentgenologist's control. It is so in the hospitals I am connected with, and the plan works nicely. Superintendents do not know the requirements of such a rapidly changing specialty and I have found they appreciate careful financing which can only be done by one familiar with the work. As to the 25 per cent. taken out for expenses by the hospital on private patient's fees, careful study of the subject makes me think this is about correct. It may vary in some hospitals slightly. This percentage (at rates charged in private laboratories) will cover actual expenses on private patients and it is self evident that the remainder is paid for the skill of the operator, and any of this going to the hospital would be as deplorable as fee-splitting is between doctors.

MANUFACTURE AND ADMINISTRATION OF NITROUS OXID FOR ANESTHESIA

THE EXPERIENCE OF LAKESIDE HOSPITAL *

A. R. WARNER, M.D.
CLEVELAND

At Lakeside Hospital, nitrous oxid gas has been used for anesthesia extensively for about eight years, and has been manufactured as a routine in the hospital for more than six years.

For the first four of these years, the gas we manufactured was not entirely satisfactory to any one, and at times was not without harmful effects. This was overlooked at first, partly because, on the whole, we had as good results as others, and partly because it was then believed that a certain amount of cyanosis was necessarily present during nitrous oxid-oxygen anesthesia, and that bad after-effects were in a measure to be expected. As our anesthetists developed more skill with this anesthetic, they were able to demonstrate to us that the cyanosis, the irritation, and the symptoms of toxemia following the anesthesia were present to a greater or less extent in all or in several patients on the same day, and that on other days there were no such symptoms at all; they convinced us that the gas made in the hospital contained a variable amount of some poison. Commercial gas, although producing at times the same symptoms of toxicity, seemed more uniform and distinctly less irritating. This difference was fairly constant, although our plant and methods of manufacture were the same as the commercial plants and methods known to us. On our worst day one patient of the gynecologic service died with all the symptoms of a severe toxemia a few hours after a simple operation, one patient of the surgical service was severely poisoned, and three others suffered to a lesser extent. The predominating symptom of the poisoning was a cyanosis that no amount of oxygen could dispel. The hemoglobin was evidently damaged, and our surgeons learned that outdoor fresh air treatment was the most effective treatment The condition, with the exception of the color, resembled carbon monoxid poisoning, yet unfortunately no spectroscopic examinations of the blood of these patients were made

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About two years ago, it became evident to all that nitrous oxid must be obtained in greater purity, or its use in the hospital abandoned On the good days this anesthesia was so satisfactory to the surgeons, so unobjectionable to the patient, and made the operative cases so easy to care for in the ward, that it seemed ideal for hospital use In our opinion these facts justified every effort to make it right The best consulting chemists obtainable were called to examine the plant and methods Each pointed out possible defects, and all agreed that better apparatus and methods could probably be developed by experiment Each called attention to the great number of the possible impurities One of our trustees, Mr H M Hanna, then offered to provide the funds necessary to run an experimental plant at the hospital, and I undertook to solve in such a plant the two following problems

1 To find a method for the manufacture of nitrous oxid of sufficient purity to be without poisonous effect

2 To devise apparatus by which this can be done as a routine in hospitals under hospital conditions

The details of many experiments with new chemical processes and types of apparatus need not be presented The entire plant was rebuilt several times The net result of the first six months' work was only more uniform gas we did not have the very bad days, yet the evidences of toxicity continued About this time we found that nitric oxid, even when present in large amounts, was entirely removed from the nitrous oxid by confining in iron tanks or over water for a few hours This explained the lesser irritation from commercial gas, which stands longer in the gasometers and is always shipped in iron cylinders Commercial gas has always been free from nitric oxid, and our gas — sometimes used without standing long in the tanks — had not been In these experiments we became convinced that the poisonous effects were, at times at least, not from the nitric oxid, which has been the generally dreaded impurity We learned, too, that the effect of the poison was cumulative, and that a long anesthesia was the most delicate available test In comparison with this, all analyses and chemical tests were crude

The impurities theoretically possible to produce in the destructive distillation of even a pure ammonium nitrate in an iron or other reducing retort are many Among these are many of the more highly organized, well-known, hemoglobin poisons, as the hydrazins and hydroxylamins It was at least possible that some of these were causing the trouble Our gas and the best samples of commercial gas obtainable were tested, and all were found slightly alkaline to phenolphthalein Published analysis of commercial nitrous oxid made by reliable chemists had reported the presence of traces of ammonium compounds and other nitrogenous substances which certified to the presence of ammonia or of substances breaking down to ammonia To test the hypothesis that these basic compounds might be the poison, a thorough washing with strong sulphuric acid was then added to the process of purification of the gas, for the purpose of removing all free basic radicals On this day — now over a year ago — our gas became absolutely neutral in reaction, and the peculiar cyanosis and all other symptoms of toxicity disappeared from our operating rooms, never to appear again when acid-washed gas was used We did, however, see it in varying degrees each time that the installation of new apparatus in the plant made it necessary to shut down and use for a few days commercial gas not scrubbed with acid All of our days are good days now we are enjoying the advantages of this anesthetic without the disadvantages which had been so constant as to become regarded as necessary and belonging to it

Confirming evidence came from independent sources The Ohio Chemical Company of Cleveland noted our better results, and remodeled their plant Three competent anesthetists, whom I have happened to meet, one from Boston, one from New York and one from Ithaca, volunteered information regarding the uniformly better results which they were having with the Ohio gas, all dating the better results from the date the company remodeled its plant and instituted the acid wash as a part of the purification process Later the Lennox Chemical Company remodeled its plant to include the acid wash Since this date I have not heard of any evidence of toxicity or any bad results from the use of nitrous oxid in Cleveland or vicinity These two plants manufacture all the gas sold in or about Cleveland

The chemical work to identify the particular poison or poisons which have caused all the troubles has not been done We know only that it is removed by the acid wash, and that it is found in the acid in the form of ammonium salts, which is consistent with the belief that it is one of the hydrazins or hydroxylamins The problem of isolating the particular poisons by chemical means is too difficult to look attractive, now that the practical results have been attained without such work

For the simple purpose of preventing commercial monopoly, applications for patents on a new method of separating the nitric oxid from the nitrous oxid, on a new wash jar devised, and on a process of removing the bulk of the impurities by condensing the 45 per cent of water in the crude gas, as well as on the process of removing traces of alkaline substances, have been made All patents issued will be held by the hospital to guarantee the unrestricted use of the apparatus and the methods covered by them

To our mind the first problem has been solved Nitrous oxid can be manufactured in sufficient purity to be absolutely safe for use in anesthesia We are not yet quite sure about the second problem Lakeside can now manufacture such gas as a routine, and safely, but the walls and ceiling of our room still bear marks made by pieces of bursted retorts, and our employees have not forgotten the fumes which repeatedly filled the corridors "from the gas plant" It is never entirely safe to place a pot containing a nitrogenous and an oxidizing substance over a fire Many defects in the models of apparatus and troubles in the handling of the purification process have been overcome, some nonessentials have been eliminated, and safety devices have been added, so that it now seems to us entirely reasonable to expect a good chief engineer to supervise a similar plant and train a helper to run it, yet it remains to be demonstrated

The cost of building a new plant for the manufacture, purification and handling of nitrous oxid similar to the one now in use at Lakeside would be about $2,700, and it would require about 600 square feet of floor space This figure includes the cost of apparatus for liquefying the nitrous oxid and for filling small cylinders The cost of apparatus for the handling of oxygen (purchased in large cylinders) outside the operating room, and for delivering it in pipes parallel with the nitrous oxid at the same constant pressure is about $300 This includes apparatus for filling small cylinders from the large The cost of running the pipes for the nitrous oxid and oxygen to the operating rooms would be additional, and would vary with distance and difficulties It would be the same as the cost of running water pipes the same distance

COST

From the first there has been a gradual reduction in the cost of nitrous oxid-oxygen anesthesia Three years ago our costs were running about $10 per hour, divided into $3 for anesthetists' salaries and $7 for the gases and incidentals The present figures are $2 50 for anesthetists and $1 57 for gases and incidentals, making a total of $4 07 In order to present the details of cost as clearly as possible, I have prepared two series of the detail of six consecutive months, each with averages The first series ends with March, 1914, and the second with April, 1915 During the first series we purchased the small cylinders used, so that the amount of gas manufactured was not the total amount used In the second period we compressed our own nitrous oxid for small cylinders, and filled small oxygen cylinders direct from the large The filling of the small oxygen cylinders from the large is distinctly a saving In Cleveland, the price of oxygen in small cylinders is just seven and one half times as much per unit volume as in large cylinders This is due to the fact that the large cylinders, at least, are oxygen from the Linde process, which is apparently of perfectly satisfactory quality The small cylinders are either refilled or oxygen from the old process The figures for the amounts of the gases used are from the storage tanks in the basement, and therefore account for all leaks, accidents and wasted gas To determine the amount of gas used per hour, the total amount drawn from these tanks was divided by the total number of hours of anesthesia reported in the month The length of anesthesia reported is the actual time that the gases are flowing

TABLE 1—AMOUNT OF GASES USED FIRST SERIES

	No Gallons N_2O from Plant	Cost of N_2O from Plant	Cost of N_2O per 100 Gallons	Total Gallons N_2O Used	Av No Gal N_2O Used per Hour	Av No Gal O_2 Used per Hour	No Hours of Anesthesia	Cost per Hour for Anesthesia
Oct 1913	54,846	$320 02	$0 59	69 646*	470	170	148	$6 18
Nov, 1913	44 601	262.80	59	61 401*	464	170	132 10	6 63
Dec. 1913	43,296	306.95	70	44 596*	398	139	112 6	6 76
Jan 1914	61 176	328.08	53	62,376*	243	43	256	3 05
Feb 1914	35 478	243 60	68	36 178*	262	83	138 44	4.80
Mar 1914	52,152	296.33	56	59 052*	326	56	182 59	4.38
Average	48,508	$292.88	$0 61	55 642	361	111	161 42	$5.30

* Small cylinders purchased in this period.

The most striking figure of these tables is the drop in the amount of nitrous oxid used per hour from 361 to 161 gallons This and the corresponding drop in the oxygen figures were caused by two factors developed and installed between the two series The first was the attachment of meters measuring the gas going to each machine so that the anesthetists could note the comparative amount of gas used in any period Our gas man repeatedly made minute readings during the anesthetics given by our three anesthetists, until we could recognize the anesthetist from a chart of these readings We demonstrated the fallacies of the rate of flow dials on the machines, and the inaccuracy of the meter readings themselves on account of the variations in the pressure The result of this work was a clear understanding by the anesthetists of when and how they wasted gas The wasting became less Our meters were secured with difficulty and at considerable expense, because the high pressure required special construction But since then one firm, at least, has put suitable meters for this use on the market, and makes a gas machine with meters as an integral part The second fact was the lowering of the pressure in the pipes leading to the gas machines from 35 to 5 pounds This pressure is, or should be, reduced by the machines to practically atmospheric pressure One of the makes of machines that we use handled the lower pressure equally well, but the other did not until we enlarged the ports It was soon noted that the lower pressure was much easier for the patient as well as more economical The anesthetist can turn on all the gas the patient can breathe without developing tendency toward positive pressure in the lungs Expiration can take place against the gas flow, checking it without effort, and there is always a sufficient volume of gas available for rapid inspiration without developing a negative pressure and effort The gas flows freely in inspiration, but is automatically checked in expiration

TABLE 2—AMOUNT OF GASES USED SECOND SERIES

	No Gallons N_2O Made	Cost of N_2O	Cost per 100 Gal	Av No Gal N_2O Used per Hour	Av No Gal O_2 Used per Hour	No Hours of Anesthesia	Cost per Hour for Anesthesia
Nov 1914	27 102	$216.85	$0 70	153	85	177 20	$3 97
Dec 1914	31 002	221 20	71	172	53	180 17	3 46
Jan 1915	18 424	123.52	67	153	62	119 20	4 71
Feb 1915	18.582	129 52	69	166	107	111 39	4 81
Mar 1915	25 062	169 00	65	153	54	163 44	3 41
Apr 1915	26 071	175 40	67	162	60	160 43	3 7[illegible]
Average	24 539	$172 08	$0 70	161	70	152 12	$4 02

TABLE 3—DETAIL OF THE COST PER HOUR

	First Series	Second Series
Nitrous oxid	$2.20	$1 12
Oxygen	.25	16
Anesthetists	2 45	2 50
Incidental items repairs etc.	40	.24
Total	$5 30	$4 02

The increase in the cost of manufacture in the second series is due entirely to the lesser amount made and the constant overhead expense for the salary of the man who runs the plant and for other fixed charges No items of interest or depreciation, but all repairs and replacements are included In each series, the cost of ammonium nitrate was the same

The recent sharp rise in the price of the nitrate is caused by the increase in the cost of nitric acid due to the war

ADVANTAGES

The advantages of this anesthetic which the patient most highly appreciates are the facts that the gases are not disagreeable or irritating, and that consciousness is lost so promptly To the patient the starting of the anesthetic is the beginning of the operation, and the sooner consciousness is lost, the better for many reasons Crile has found that it protects the brain cells from shock more than other anesthetics especially so, if combined with a little morphin Following the operation, the patient is not called on to endure patiently discomfort from the irritation of ether in the eyes, throat and bronchial tubes, or on the skin There are some to whom a greater advantage seems to be the fact that they are not likely to talk or act foolish when coming out from the anesthesia

In the operating room, gas has an advantage over ether anesthesia because the patient gets under its influence more quickly, saving time, and because at the close of the operation the patient is conscious and can be returned to his room as easily as any conscious patient The familiar scenes of delirium in the second stage of ether, with orderlies holding the struggling patient on the table and the surgeon trying to boss the job and at the same time keep sterile, are entirely eliminated The ether patient who starts vomiting in the corridor on the way back to his room or ward made more trouble than we realized Every one took the distressing scene as an occasional necessity, but it certainly never made it any easier for others to face the ordeal of an operation

The advantages of nitrous oxid anesthesia are best appreciated in the wards, and it is here that the hospital gets back some of the initial cost It costs a hospital money to care properly for a noisy vomiting ether case in a side room, not only in the nurses' time devoted to the case, but in the effect on the other patients Comfortable ward patients are as curious as children, and the full details of the ether room scenes never fail to reach the newest patient, creating in him added apprehension and dread It costs money to have house doctors and head nurses busy explaining away the apprehensions and dread of an operation, and to keep the courage up even after the surgeon has convinced as to the necessity and comparative safety of the impending operation The return of a patient to his ward bed conscious and comfortable directly from the operating room gives a very different impression as to an operation from that given by a return after a day or so spent in the side rooms Every patient knows that side rooms are for things the others must not see It costs money to keep a private room patient convinced that water is withheld for his own good, and convinced kindly and tactfully enough to dispel the suspicion that it is but a rule and red tape that should not apply in his case

With pure gases, vomiting is extremely rare when morphin is used it comes about as must be expected from the use of this drug independent of anesthesia, and it resembles morphin vomiting in type Pneumonia is apparently much less frequent with nitrous oxid, and the same is true of postoperative shock, but the cause of either of these in any given case is so obscure that it is hard to fix responsibility Since we began the use of nitrous oxid, there have been many other changes and improvements in the care given our patients which should have an effect on the pneumonia and the surgical shock percentages We are certainly getting much less postoperative shock and pneumonia than formerly, and nitrous oxid has undoubtedly contributed largely to this change

Many patients, especially minor operative patients, are able to leave the ward much sooner Not only is the day in the ether room lost, but it often requires another one in the ward to bring back the expended energy The cost of many extra days' treatment saved can properly be credited against the gas anesthesia bill

ADMINISTRATION

Under the administration of nitrous oxid, this paper can mention only a few observations of a skeptical hospital administrator who has watched the development of skill in its use More than half of nitrous oxid anesthesia was once carbon dioxid asphyxia blue-black patients were the rule Now we know that cyanosis at any stage of the anesthetic is evidence either of poisons in the gas or of faulty, incompetent administration It is not necessary, and is always harmful Enough oxygen should be given at all times to preserve normal color, but more is a waste Perfectly normal color can be maintained while the patient is presenting all the symptoms of asphyxia, including convulsions For this reason, rebreathing to any extent is dangerous, and is not justified by the gas saved Without the color to guide, the percentage of carbon dioxid in the alveolar air may mount unnoticed to levels dangerous through its effect on the brain centers

The lesser degree of muscular relaxation in nitrous oxid anesthesia is sometimes annoying to the surgeon It can be overcome by the mixing of a little ether vapor when the relaxation is needed, and all machines are equipped to do this The results in the matter of losing the advantages of the nitrous oxid anesthesia are in exact proportion to the amount of ether used

Proper appreciation of nitrous oxid as an anesthetic and an analgesic has been delayed by the fact that it could be used by the unskilled without horrible results traceable directly to the lack of skill, and by the fact that it was mentally classed by anesthetists with ether, chloroform and ethyl chlorid as an anesthetic, and its effect expected to correspond with that class Temporary harmless conscious analgesia for dentistry, childbirth and other minor surgery may seem too good to be true, but it is at hand Analgesia and unconsciousness without a profound or lasting impression on the central nervous system is the ideal for major surgery Nitrous oxid in skilled hands can produce both, in unskilled hands, neither

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New Possible Source of Vanilla—According to correspondence from J F Boomer, Manila, in *Daily Consular Reports*, a new vanilla-producing plant has been found in the Island of Mindoro, Philippine Islands, called *Vanilla ovalis* The vanilla of commerce at present is the product of *Vanilla planifolia* The plant is found both in open ravines and in the deep forest, but is not plentiful The Bureau of Education of the Philippines is investigating the possibility of propagating the plant and developing it as a source of vanilla extract for trade purposes The plant has roots similar to those of the amlong, but are superior, as they are pure white and require no bleaching The roots are used for basket making

PELVIC INFECTIONS AND THE APPLICATION OF DRAINAGE

L G BOWERS, M D
DAYTON OHIO

The subject of pelvic infection should not be discussed without emphasizing the fact that the condition is to a very large degree preventable When it is recognized that the majority of cases are due to gonorrhea, and that the next most common causes are abortion, especially induced abortion, and labor, it is obvious that appropriate education of the laity and the profession would do much to eliminate this complication We should therefore lose no opportunity to teach the public that gonorrhea is a very serious disease and that the production of abortion is a dangerous practice, and we should try to make the general practitioner realize that labor is a surgical procedure and requires strict asepsis

While it is true that the gonococcus is the primary cause of the majority of pelvic infections, it must be borne in mind that it is a single infection for a very short time, usually not more than two or three days, and that the nature of the mixed infection is of much importance When the complicating organism is the staphylococcus or colon bacillus, the outlook is usually favorable, but when it is a streptococcus or pneumococcus a very guarded prognosis is necessary It is essential, therefore, to the intelligent treatment of these cases that whenever drainage is performed, a culture be made and the exact nature of the infection determined The identification of the infecting organisms not only aids us in the prognosis, but makes possible the proper application of specific therapy In cases complicated by the staphylococcus or colon bacillus, an autogenous vaccine, administered daily in small doses, is often of great value When the streptococcus is present the antistreptococcus serum may be used to advantage Fifty c c should be given every six hours until a favorable reaction occurs In my observation these measures are too often not resorted to early enough to give us the best results Particularly in cases in which the abdomen has been soiled by the rupture of a tube in operation it is much wiser to give a large dose of serum as a prophylactic than to wait until an infection has developed

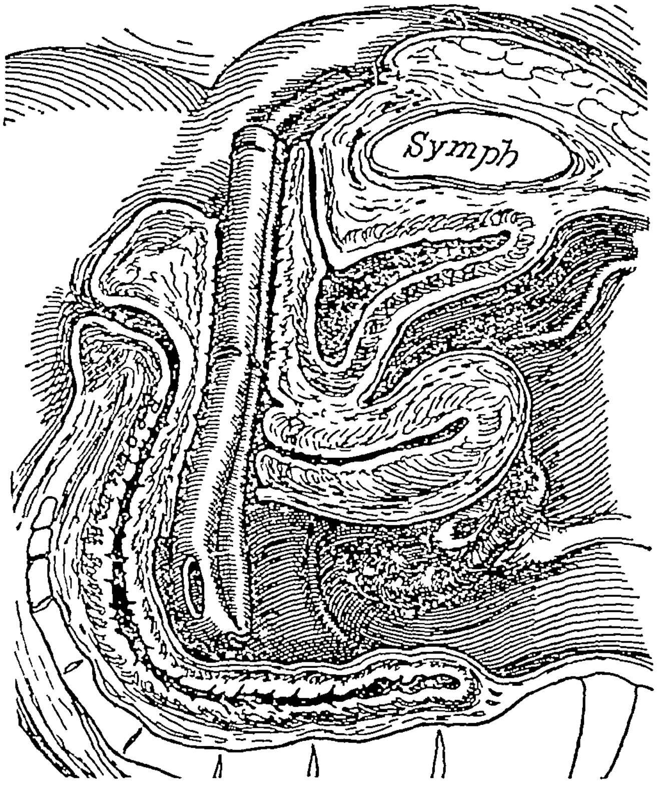

Fig 1 —Double tube drain in position in posterior culdesac

As these cases are usually first seen by the family physician, we should, so far as possible, teach him their proper management In my observation, the medical treatment of acute cases is usually too vigorous For instance, a resort to frequent and continued purging often defeats Nature's effort to limit the infection by walling it off In numerous cases I have found the doctor much exercised over the failure of his efforts to produce free catharsis The abdomen is distended and vomiting is frequent, and he thinks he has obstruction The fact is that Nature has splinted the intestine to limit the spreading of the infection, and therefore the doctor's medicine is ejected The use of morphin, particularly before a diagnosis has been made, cannot be too strongly condemned as it checks the secretions, increases the vomiting and obscures the diagnosis A liberal use of the ice-bag to the abdomen will usually relieve the pain The stomach should be kept empty of both water and food If vomiting is present, stomach lavage usually relieves it and puts the intestines at rest Thirst can be relieved by frequent slow saline enemas The important thing is to disturb the patient as little as possible

The chronic cases are unfortunately, very often subjected by the general practitioner to even more serious mistakes in treatment The use of tampons, douches, suppositories, posture, etc, gives only temporary relief, and the repeated acute congestions and chronic inflammatory processes lead to gross pathologic changes The resulting physical distress causes great disturbance of the nervous equilibrium with the development of various neuroses and occasional psychoses Even after radical operation these conditions may persist for a long time for it is well known that the nervous tissue, being the most highly organized, is the slowest to repair The probability that an early, careful radical operation would restore these patients to a practically normal condition should prevent persistence in purely palliative treatment

In the surgical treatment of pelvic infections, the judgment gained in long experience is necessary to the proper application of whatever rules may be formulated To operate during the storm of acute pelvic infection spells disaster many times Usually we must give Nature time to limit the infection by protective adhesions and to develop a specific immunity, but if the patient is seen early, and the diagnosis is reasonably positive, it may be good practice to operate immediately A history of previous attacks will aid materially in determining the best course to pursue A beginning general peritonitis, as evidenced by rapid pulse, high temperature and general or local abdominal rigidity or tenderness, usually contraindicates early surgical interference

There are certain principles of drainage which are almost axiomatic and failure to follow them results in injury to the patient, if not death The most important of these principles is that the lowest level of a cavity should be the highest point for the insertion of drainage It follows, therefore, that the culdesac should always be the point for drainage in pelvic cases, rather than uphill drainage through the abdominal wall There are, however, two exceptions to this rule The first is the insertion of a small wick drain in the abdominal incision as an indicator of hemorrhage following myomectomy The second is when the infection is walled off in front of the bladder and attached to the anterior abdominal wall This type will be discussed later

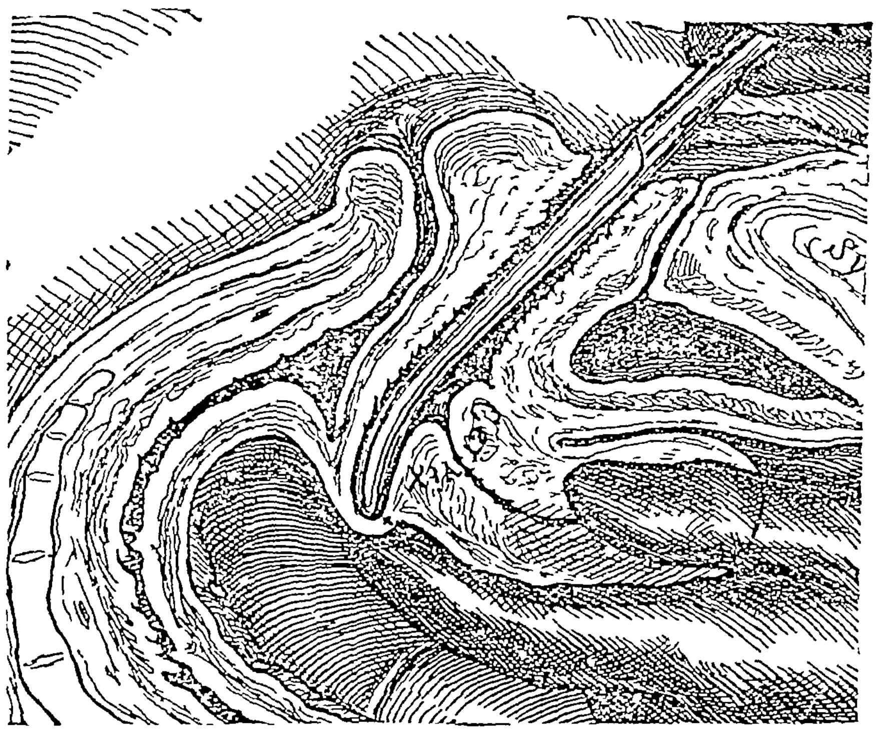

Fig 2 —Puncture of vaginal fornix, bimanual method

As has been said, most acute pelvic infections are gonorrheal in origin As a rule they are best treated in a palliative way, as experience has taught that, within certain limits, they run a definite course Walling off the infected area and the development of immunity seems to be Nature's way of handling the situation, and early surgical interference may only serve to spread the infection Those cases which develop cellulitis accompanied by a distended culdesac are best treated by posterior vaginal puncture and the insertion of the double drainage tube for a few days A rather stiff rubber tube is bent on itself in the middle, a linen stitch is placed near the ends to hold the two halves parallel, and a good-sized opening is cut in the outer side of each half just below the bend The advantages of this tube are that it has a smooth, blunt end for insertion through the puncture, it gives free drainage and allows irrigation with a return flow Figure 1 shows this tube in position in the culdesac It is left usually from five to seven days In case the culdesac opening becomes clogged or contracts sufficiently to prevent free drainage after the removal of the tube, the opening may be stretched with a uterine dressing forceps and the cavity irrigated with a mixture of one dram of tincture of iodin to a pint of sterile water A Leonard douche is the most useful and convenient instrument for irrigating the cavity

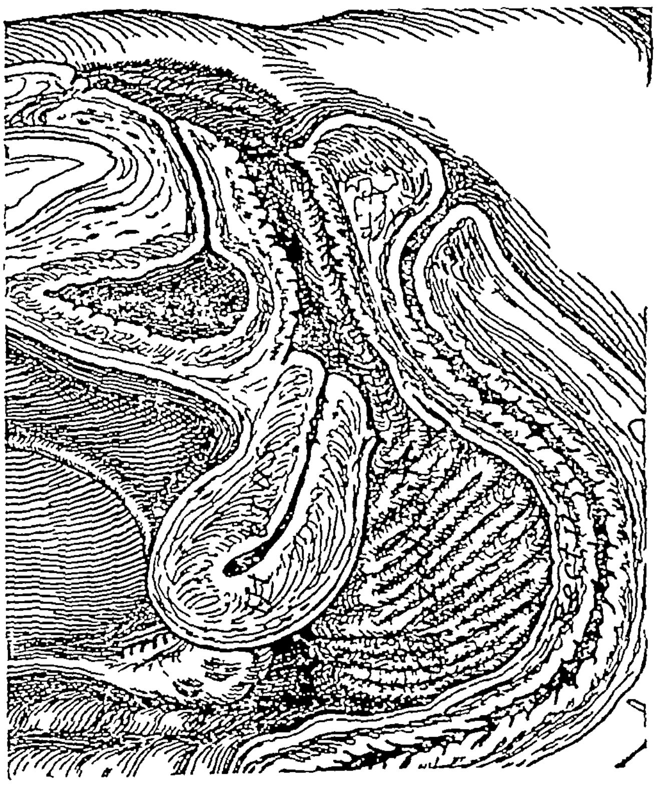

Fig 3 —Gauze drain in posterior culdesac

The Fowler position is a very important aid in securing thorough drainage in these cases and should always be employed When, for any reason, the Fowler position cannot be used, the drainage will be greatly improved by elevating the head of the bed about 10 inches

One caution should be given for the performance of culdesac drainage in these acute cases The broad ligament should be explored through the opening with the finger and any adhesions that may be holding pus should be broken up Frequently on such exploration one finds walled-off pus cavities which, when broken into, will liberate as much pus as the first incision I have had the experience, when not taking such precaution, of having to return my patient to the operating room because the pulse and temperature did not return to normal After breaking up the inflammatory wall and liberating the pus which was undoubtedly present at the time of the former operation, the temperature and pulse immediately became normal and rapid convalescence ensued I feel quite sure that if these precautions are taken, a number of cases will be saved a secondary operation following drainage of the culdesac I am firm in the belief that free evacuation of every pus focus in the pelvis will give the tube such free drainage at the fimbriated end that it will not be likely to cause trouble later

Posterior vaginal puncture with tube drainage usually gives immediate relief in the acute cases, without any surgical risk Most of the cases so treated result in apparent cure and further operative interference is unnecessary, or may be refused by the patient If there is a history of frequent pelvic infections, more radical measures are called for than culdesac drainage If the tubes remain enlarged and tender and the patient complains of constant or periodic pains of greater or less intensity, a radical operation is indicated This operation can be performed more safely during the interval than during the acute attack, unless the patient is seen early It is generally best to wait from two to three weeks after the subsidence of the acute attack and the return of the pulse and temperature to normal By so doing time is given for the absorption of the exudate, thereby lessening the amount of adhesion The inflammatory wall also becomes stronger, thereby minimizing the danger of dissemination of the infection All of us have had the misfortune of easy rupture of the tubes in the dissection, when probably a few days recuperation would have avoided such a complication Some operators state that a leakage during a pelvic operation is rarely followed by complications, but in my experience this is not the case This is shown by the fact that a number of years ago, when pelvic gravity drainage was not so frequently used as at present, we had many more complications and a much higher mortality

I advocate most strongly the necessity of a complete salpingectomy in these chronic cases A number of very good operators still tie off the tube *en masse* at the cornua of the uterus leaving at least three fourths of an inch of the stump of the tube These stumps frequently cause as many symptoms of the old salpingitis as were present before the operation Many times the trouble is not relieved, the large stump causes the formation of new adhesions and the trouble is actually increased A wedge-shaped piece, including the entire stump of the tube, should be cut out of the cornua and the edges approximated and whipped over It should be said, however, that in most of the chronic cases there is a metritis requiring a hysterectomy for complete cure My own experience has been that it has been nearly always the operation of choice

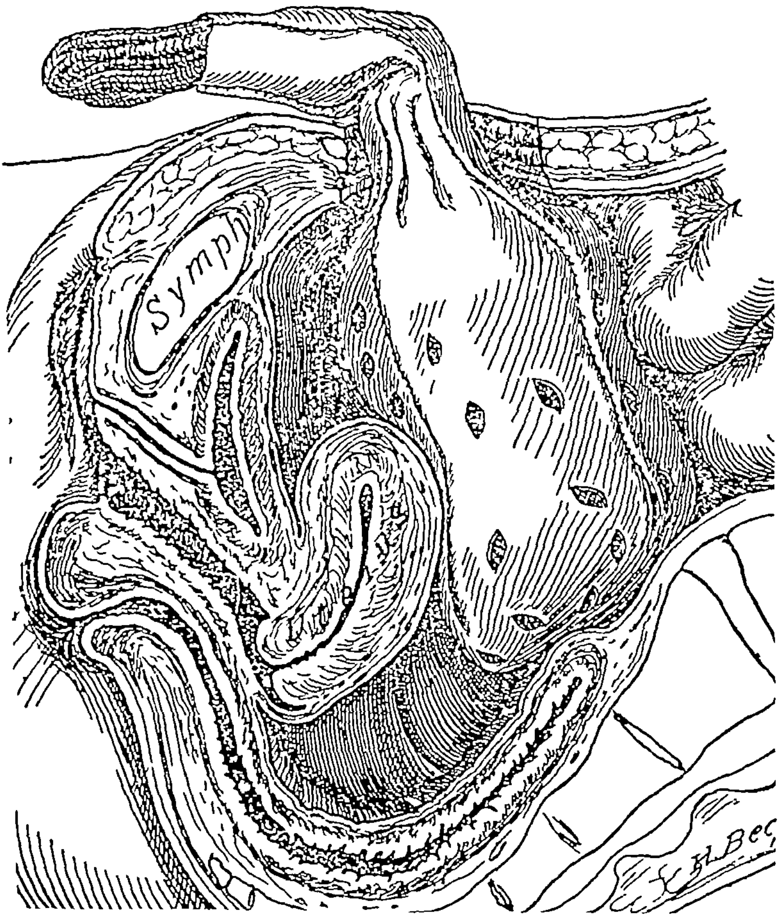

Fig 4—Abdominopelvic bunch drain in position

In cases of pyosalpinx of the chronic type in which there has been no evidence of an acute exacerbation for a long period, and if the patient's condition is good, no drainage is needed in case of rupture during the operation, as the contents of the tubes are usually sterile, but if the patient's condition is below par or if there is the least suspicion of an active infection, it is good practice to insert the culdesac pelvic drain

In all cases in which drainage is indicated following a radical operation for pyosalpinx, I prefer a silver nitrate or iodoform gauze culdesac drain The drain should be made by folding a piece of gauze 1 yard wide and 1½ yards long into a 1½ inch strip In cases in which the drain may be needed, the vagina should be prepared before operation, by scrubbing and thorough rinsing with sterile water, drying and painting, through a speculum, with equal parts of tincture of iodin and alcohol When the drain is to be introduced, the left hand is encased in a long glove, and the vulva having been surrounded with sterile towels, the operator inserts a long forceps, curved on the flat, into the vagina, and with the right hand in the abdomen, locates the proper point for puncture of the culdesac by bimanual touch, as shown in Figure 2 The puncture is then made by making pressure on the forceps or, preferably, by making an incision over the point of the forceps with a scalpel held in the right hand The blades of the forceps are then pushed through the incision and the nurse is instructed to hold the handles on the outside and keep the blades open until the end of the drain is placed between them The blades are then closed and the nurse gently withdraws the forceps until the end of the drain appears at the vulva The operator then changes gloves and the remainder of the drain is placed in folds posterior to the uterus, as shown in Figure 3 This arrangement of the gauze facilitates drainage and subsequent removal is easy This bimanual method of introduction enables the operator to make the puncture rapidly and accurately, at whatever point he may elect

It had been my practice to remove the culdesac drain after five days, at one sitting, but after reading the plan advocated by Wertheim's assistant, I decided to try it and in about fifty consecutive cases have followed his technic This process was to remove half the drain in five days, one half of the remainder on the seventh day, and the rest on the ninth day As 90 per cent of these cases developed an infection of the abdominal wound, I abandoned the method In my judgment, the infection of the abdominal wound was caused by a collection of exudate above the gauze As the gauze became saturated with exudate, drainage was impeded or entirely stopped, so that before the gauze was entirely removed, sufficient backing up had occurred to produce the infection By complete removal at the end of five days, this danger is averted It was further noted that the cases drained much longer when the drain was removed by the three-step method than when it was entirely removed at the end of five days Since returning to my usual method of removing the entire gauze drain on the fifth day, I have had in about the same number of cases but one case of abdominal wound infection

The administration of gas for the removal of the drain is much appreciated by the patient It saves the patient pain and shock and relieves the operator from the charge of being rough and heartless

When the infection is anterior to the uterus and attached to the anterior abdominal wall, the bunch drain described by Mikulicz and modified by Rovsing by using a rubber bag covering is very useful It is applicable sometimes also to cases of pus appendicitis, incompletely walled off, in which the infection extends into the pelvis and in front of the uterus This method has the double advantage of giving excellent drainage and also of excluding the clean intestine and omentum from the infected area

This drain is shown in Figure 4 and consists of an oiled silk bag filled with gauze The bag is 5 inches in diameter when inflated, and 10 inches long The oiled silk cloth is cut in proper shape and stitched on a sewing machine and then inverted so as to turn the edges inside The drainage openings are then snipped with scissors at intervals to correspond with the area to be drained The drain inside the bag is made by folding a piece of gauze 1 yard wide and 3 yards long into a 1½ inch strip Beginning on the second day, a little of the gauze is withdrawn daily, and the entire bag with the remaining gauze on the fifth day

CONCLUSIONS

1 Preventive measures should be promoted by instruction of the public and by a better technic

2 The infecting organism should be determined and specific therapy employed when indicated

3 The preoperative treatment should not be too vigorous

4 When drainage is desirable, it should, with rare exceptions, be through the culdesac, and it should be aided by posture

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A Sanitary and Satisfactory Substitute for the Free Lunch —In some regions of our large cities inhabited by the poorer classes, there are few eating places except those connected with saloons The food is badly cooked, indigestible and unpalatable, and often the meals served in homes are not much better Moreover, home cooking done over a hot fire in the kitchen that serves also as a family dining room means acute discomfort to the whole family in summer The physical and social results are both bad Public kitchens which dispense good cooked food at low cost have been organized in a few cities to meet the needs of the situation Holland Hudson describes in the *Modern Hospital* such a kitchen (said to be the first in New York) under the direction of the New York Association for Improving the Condition of the Poor The longshoreman can now obtain a substantial meal of well-cooked food, served on a table from clean dishes, at less cost than the "pony of red-dog whisky" which accompanies food at the free-lunch counter Housewives can procure hot cooked food to serve at home The kitchen is self-supporting A high sanitary standard is maintained All employees are compelled to pass a rigid physical examination, and no one is employed who has any communicable disease The kitchen is well screened from flies, and recently received a score of 100 points from the department of health A branch kitchen is soon to be established

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THE WASSERMANN TEST IN THE MEDICAL DISPENSARY*

JOSIAH J MOORE, MS, MD
CHICAGO

Any estimation of the prevalence of syphilis in a community by means of clinical symptoms alone is hazardous The protean manifestations of the disease, the latent type of both congenital and acquired forms, and the denial of a specific history, either through ignorance or wilfully, render its diagnosis extremely difficult in many instances In recent years, however, the introduction of the Wassermann reaction has aided, in a marked degree, the proper classification of many heretofore obscure conditions

To be of greatest value in the diagnosis of a disease, the specific test for that disease, whether for laboratory or clinical purposes, must be practically constant The thousands of Wassermann tests made on patients suffering from syphilis give ample proof that the test is practically constant for this condition Various estimates give from 60 to 100 per cent positive reactions in different stages of the disease Less than 0 5 per cent of conditions other than syphilis react positively, these usually give a negative reaction in a short time with no syphilitic treatment, or occur in diseases which are easily differentiated from syphilis Therefore, in the Wassermann test we have a fairly reliable serologic means of estimating the prevalence of syphilis

Based solely on clinical symptoms there are the oft-quoted figures of Erb, who gives 12 per cent of syphilis in the adult population of Berlin, and those of Fournier, who states that 15 per cent of adult Parisians have the disease In the last three years Wassermann reaction surveys in hospital, asylum and municipal laboratories are giving us a clearer insight into the amount of this disease among certain groups of the community Churchill[1] found that 28 per cent of 101 children examined at the Children's Memorial Hospital of Chicago gave a positive reaction In 111 cases admitted to the Children's Hospital in Boston, Lucas[2] found 31 per cent infected Browning[3] found 14 per cent of syphilitics in 331 children in the outpatient department of a children's hospital of Glasgow Holt[4] of New York found 6 per cent of infected children in his series

Routine Wassermann tests are now made in many insane asylums A few examples will show the high percentage of positive results on these patients Of 600 inmates of the Oregon Insane Asylum, Watson obtained a positive reaction in 20 per cent with only 5 per cent giving positive histories Ivey[6] found 29 per cent of the women and 25 per cent of men infected in over 700 negro insane of Alabama In 122 cases of nervous disease in the wards of the Western Infirmary of Glasgow, Browning[3] obtained 41 per cent positives In 104 prostitutes and 109 men classified as tramps, Browning found 100 per cent of infection

The general medical dispensary affords a medium by which we come in close contact with a certain class of persons in whom, through poverty, deficient education and mental instability, we might expect a higher percentage of syphilis than in the average of the community For the last several months Wassermann reactions have been made as a routine test on practically every person attending the medical dispensary clinics of the University of Illinois College of Medicine, Chicago According to the classification employed at this dispensary the patients attending the genito-urinary, gynecologic, pediatric, nervous, dermatologic, or surgical clinics are not included in this list It embraces only those patients treated in the medical clinic

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* From the Department of Experimental Medicine University of Illinois

[1] Churchill Tr Am Pediat Soc 1912 xxiv 149

[2] Lucas Boston Med and Surg Jour 1913 clxix 423

[3] Browning Brit Med Jour 1914 i 77

[4] Holt Am Jour Obst, 1913 lxvii 1228

[5] Watson Northwest Med 1910 ii 103

[6] Ivey Med Rec New York 1913 lxxxiv 712

In the technic of the test itself we employed from two to five antigens, never less than two The antigens were the acetone insoluble fractions of beef and human hearts obtained from several different sources, including three made by myself, also alcoholic extracts of syphilitic liver No cholesterinized antigens were used The antigens were titrated in the usual way so that 0 1 c c of a one tenth dilution was employed in the test

Both antichicken and antihuman hemolytic systems were employed, the former in all cases, the latter in about 25 per cent In all tests in which both systems were used the results were identical Washed chicken corpuscles were made up in a from 2 to 5 per cent suspension and to this was added twice the titer of hemolysin For complement both fresh guinea-pig serums and serums allowed to stand for seventy-eight hours in the ice-box were used These gave similar results The serum was diluted to 8 per cent, that is, 1 c c guinea-pig serum was added to 11 5 c c of sterile normal salt solution, and this titrated before each series of tests Twice the complement titer was employed in the test

All patients' serums were heated to 56 C (132 8 F) for one-half hour and used in amount of 0 1 c c After the patient's serum, the antigen and complement were added to the test tubes, the total volume was made up to 1 c c by the addition of normal salt solution and then incubated for one hour, after which 1 c c of sensitized chicken corpuscles were added and the whole again incubated for one hour, at which time the readings were made

In those tests in which human corpuscles were employed we followed the method described by Noguchi[7]

The Wassermann reaction was performed on 418 patients These are classified in Table 1

Fifty-six, or 13 4 per cent of the total number reacted positively Twelve were weakly positive or doubtful, eight of these were undoubtedly due to treatment Omitting those who gave a weak reaction, and presented no history or other symptoms of syphilis, and adding those who reacted negatively but who had had the disease, we have 78, or 18 6 per cent of this group who have suffered or are now suffering from syphilis This at first glance is a high percentage, but when we consider that we are dealing with the ailing members of a class of society which are more or less unfortunate in the struggle for existence, the figures will not appear so high

As to sex, of 89 women, 16, or 18 per cent, gave positive reactions, while 40, or 12.2 per cent of 329 males were positive This higher percentage of positives among women might lead one to believe that the disease was more generally prevalent among females than males This, however, would be a false impression While the majority of the women having this disease are found in the medical clinic, most of the men having syphilis attend other clinics, especially the dermatologic and genito-urinary

The difficulty of diagnosis of syphilis in the medical dispensary, as in all other branches of practice, is increased by lack of adequate history and especially by the obscure manifestations of the disease The vague answers given to questions relative to the history of the infection are of little value In twenty-eight of the fifty-six positives a definite history was given, and this was obtained in many cases after the reaction was reported positive On the other hand, many of the negatives gave a history simulating an earlier specific infection The facts are forcibly presented in an article by Krumbhaar and Montgomery,[8] who, in a series of Wassermanns on 108 dispensary patients obtained forty-eight frank positives, seven doubtful and fifty-three negative Of the positives, 35 per cent gave negative histories and a large proportion of positive histories were obtained from those giving negative tests

TABLE 1 —CLASSIFICATION OF FOUR HUNDRED AND EIGHTEEN CASES IN WHICH THE WASSERMANN TEST WAS PERFORMED

	No of Cases	Males	Females
Wassermann negative	350	278	72
Syphilitic	14	11	3
Nonsyphilitic	336	267	69
Wassermann weakly positive	12	11	1
Syphilitic	8	7	1
Syphilitic?	4	4	0
Wassermann positive	56	40	16
Congenital	5	2	3
Secondary	4	1	3
Tertiary	47	37	10
Total	418	329	89

A more important cause of incorrect diagnosis is the lack of symptoms pointing toward the syphilitic infection Thus the tentative diagnosis at the first visit was other than syphilis in a majority of the positive cases As in all first class medical dispensaries the first visit diagnosis is often made before all the laboratory returns are obtained and before a thorough physical examination is completed Occasionally, for the primary diagnosis, a pronounced symptom, as constipation, myalgia or anemia, was given, until further investigation could prove the cause But even with a complete physical examination the symptoms often were so vague that the diagnosis of syphilis could not be made from the clinical findings alone Naturally it is in these cases especially that the Wassermann test is invaluable

The tentative diagnosis of thirty-two of the fifty-six positives was other than syphilis Findings similar to these were made by Krumbhaar and Montgomery, who state, "Among the forty-eight positive cases nineteen were tentatively diagnosed under other headings at the first visit, and in a large proportion of the remainder a good deal of uncertainty existed as to the specific nature of the cases "

In Table 2 the tentative diagnosis and the final diagnosis are presented Frequently but one visit was made by the patient and the result of the Wassermann test could not be followed up In a few of those cases in which the Wassermann is weakly positive the final diagnosis of syphilis is questionable In some instances two diseases were actually present, the syphilitic symptoms being either quiescent or the manifestations of the accompanying condition being so prominent that syphilis was not considered, in others the symptoms might have been caused by a variety of conditions but with a positive Wassermann and favorable response to specific treatment they undoubtedly were due to syphilis and are so designated in the final diagnosis

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[7] Noguchi Hideyo Serum Diagnosis of Syphilis Philadelphia J B Lippincott Company 1910

[8] Krumbhaar E B and Montgomery C M Syphilis and the Medical Dispensary The Journal A. M A Jan 24 1914 p 260

The value of the Wassermann reaction can best be demonstrated by the citation of a few cases In Case 3, in a painter, plumbism was confirmed by laboratory findings It is reasonable to suppose that this condition may produce a plus reaction, but tests in similar cases reacted negatively In Case 26, the patient being the wife of the patient in Case 3, there was a history of two abortions and a positive test Case 10, in a man of 50, was recognized clinically to be carcinoma of the stomach with liver metastases until three positive Wassermanns led to the employment of potassium iodid and mercury therapeutically, the patient improved remarkably, the liver decreased in size, the jaundice cleared, and the abdominal tumor in the region of the stomach disappeared Case 18 resembles Case 10 closely in that several reactions were positive, but the treatment produced only a temporary improvement The patient succumbed to the disease in another city We learned that a necropsy was performed and carcinoma of the stomach found, but we were unable to obtain a report of the other findings The diagnosis was carcinoma and syphilis

In Case 31, a girl of 22 had an enlarged thyroid, pulse of 140 and other symptoms of exophthalmic goiter She had been treated for this disease for over two years at various hospitals and dispensaries, with no improvement Wassermann tests were persistently positive After being on specific treatment for four months the pulse rate was lowered to 90, the goiter had reduced in size, and the patient has now resumed her work as an office girl The Wassermann test, however, is still positive In connection with this case it is interesting to know that a brother (Case 7) had a peculiar train of symptoms which led to several diagnoses The positive Wassermann led to a final diagnosis of syphilis, or rather of juvenile tabes I have learned that under specific treatment the boy is now apparently well Wassermanns made on the mother and two other children were negative We could not obtain a test on the father, but learned that he had been a drunkard and had a "bad disease," presumably syphilis The clinicians concluded that both these cases were of congenital origin I am not attempting at this time to explain the negative reactions of a portion of the family and the positive reactions of the others

Six of the fifty-six positives had tuberculosis with syphilis The criticism may be made that tuberculosis is one of the conditions that occasionally give a positive reaction In this series over thirty patients suffering from tuberculosis reacted negatively Besides these we have another series of over fifty tuberculous cases in which the tests were negative, so that whenever a positive test was repeatedly obtained in a tuberculous patient the diagnosis of syphilis was made The same doubt may be expressed with regard to the patients with carcinoma A large series of malignant conditions have reacted negatively however, leading us to assume that whenever persistent positive Wassermanns are present in cases of malignant tumors or in those diagnosed as such, either syphilis or syphilis with carcinoma is present

TABLE 2 —CLASSIFICATION OF POSITIVE WASSERMANN REACTIONS

No	Tentative Diagnosis	Final Diagnosis*	History of Syphilis	Wassermann Test †
1	Pulmonary tuberculosis	Pulmonary tuberculosis		+
2	Syphilis		0	+
3	Lead poisoning	Lead poisoning	0	+
4	Chronic plumbism, ulcers of leg		0	+
5	Constipation		0	+
6	Rheumatism		0	+
7	Juvenile tabes?		0	+
8	Arteriosclerosis		0	+
9	Gastritis	Tabes	0	+
10	Carcinoma of stomach and liver		0	+
11	Syphilis			+
12	Syphilis			+
13	Syphilis			+
14	Tuberculous epididymitis	Tuberculosis	0	+
15	Bronchitis		0	+
16	Syphilis			+
17	Syphilis		0	+
18	Carcinoma of stomach	Carcinoma	0	+
19	Constipation		0	+
20	Syphilis			+
21	Bronchitis		0	+
22	Myalgia			+
23	Vertigo		0	+
24	Endocarditis			+
25	Syphilis			+
26	Syphilis			+
27	Syphilis			+
28	Anemia		0	+
29	Constipation		0	+
30	Vicarious menstruation		0	+
31	Exophthalmic goiter	Exophthalmic goiter	0	+
32	Bronchitis, neurasthenia		0	+
33	Pleurisy, myalgia		0	+
34	Syphilis and tuberculosis	Tuberculosis		+
35	Syphilis			+
36	Bronchitis			+
37	Syphilis?		0	+
38	Syphilis?		0	+
39	Syphilis?			+
40	Anemia			+
41	Syphilis			+
42	Bursitis	Bursitis	0	+
43	Syphilis?			+
44	Syphilis		0	+
45	Constipation			+
46	Syphilis?		0	+
47	Syphilis?			+
48	Tuberculosis	Tuberculosis	0	+
49	Bronchial asthma	Asthma		+
50	Aneurysm of aorta	Aneurysm		+
51	Tuberculosis	Tuberculosis		+
52	Syphilis			+
53	Hiccough			+
54	Tuberculosis	Tuberculosis		+
55	Gastritis			+
56	Syphilis			+
57	Bronchitis			±
58	Syphilitic aortitis	?	0	±
59	Malaria	?	0	±
60	Myalgia			±
61	Syphilis?			±
62	Pulmonary tuberculosis	Tuberculosis	0	±
63	Congenital syphilis	?	0	±
64	Constipation		0	±
65	Syphilis?			±
66	Arteriosclerosis			±
67	Anemia		0	±
68	Tuberculosis	Tuberculosis		

* In each of these cases the final diagnosis was of syphilis Attendant conditions as noted

† The sign + indicates Wassermann test positive, ± weakly positive.

In order to reduce the errors of the test, whenever possible it was repeated When only one visit was made this could not be done Tests were made more than once on over half of the sixty-eight strong and weak positives Repeated tests naturally were of most value in those reacting weakly positive In some cases a weakly positive reaction when repeated would be negative, others would be frankly positive, and still others would be again weakly positive.

When a history of syphilis was obtained, or specific treatment had been used and the reaction showed but 25 per cent. hemolysis the case is called syphilitic. With no history, symptoms or other manifestations of syphilis and with but one doubtful test the diagnosis of syphilis is questionable. With several negative tests after one doubtful positive the test was classified as negative.

Many cases diagnosed as suspected syphilis reacted negatively. Although the Wassermann test is of great value when positive, still repeated negative reactions are of great service in aiding diagnosis. Included among the conditions reacting negatively are diabetes mellitus, acute articular rheumatism of both streptococcal and gonorrheal origin, endocarditis, arteriosclerosis, gastritis, gastric ulcer, neurasthenia, tuberculosis of lungs, of lymph glands, and of epididymis, epilepsy, myalgia, constipation, icterus, lead poisoning, intestinal parasites, Hodgkin's disease, cholecystitis, exophthalmic goiter, bronchitis, anemia, myocarditis, emphysema, neuritis, carcinoma of breast and carcinoma of stomach.

SUMMARY

A positive Wassermann test is of inestimable value in the diagnosis of syphilis in the medical dispensary.

The unreliability of histories and the protean nature of the disease make it extremely difficult of correct clinical diagnosis in all cases.

Fifty-six positive Wassermann reactions were obtained in the routine examination of 418 patients. Only 50 per cent. of those with a positive test gave a history of having syphilis. Twelve weakly positive reactions were obtained, four patients being tested only once; without history or symptoms the diagnosis of syphilis could not be made in these. Repeated negative tests were of assistance in diagnosing nonsyphilitic conditions in which false histories of previous infections were obtained.

EFFICIENT DISPENSARY CLINICS A REQUISITE FOR ADEQUATE COPING WITH VENEREAL DISEASE *

MICHAEL M. DAVIS, Jr., Ph.D.
Director of the Boston Dispensary
BOSTON

Fifteen years ago tuberculosis was prevalent, probably more prevalent in proportion to the population than it is today; but comparatively few persons were thinking and talking about it as a public problem of magnitude. Today venereal diseases are prevalent, probably no less prevalent in proportion to the population than they were ten or fifteen years ago; but the general public is but just beginning to allow us to talk about them as a public problem of magnitude. A suggestive parallel may be drawn between tuberculosis on the one hand and venereal disease on the other, with respect to the growth of public interest in their treatment and prevention. Physicians and others close to the facts have realized for many years how grave and widespread was the problem presented by tuberculosis; but it is only ten years since the campaign against it was organized, nationally, when the National Association for the Study and Prevention of Tuberculosis was formed. A few local antituberculosis committees had preceded this general body. Since 1905 a wonderful development has taken place. A great educational campaign has spread to every corner of the country. Tuberculosis is a name to conjure with; a word to raise money with; $20,000,000 was spent by public and private associations in treating and preventing tuberculosis last year. Even more remarkable has been the increase in facilities providing for diagnosis and treatment.

In 1905, there were only eighteen tuberculosis sanatoriums, providing 673 beds. In 1915, there are over 500 sanatoriums, providing some 30,000 beds. Up to 1905, only eighteen dispensary clinics for tuberculosis had been opened in the United States. In 1915 there were over 400 such clinics and the number is increasing with great rapidity. These vast facilities for treatment have been established within this short period for a disease which is no more prevalent today than it was ten years ago, so that both sanatoriums and clinics are caring for patients who formerly were either cared for by private medical practice or not cared for at all. The establishment of sanatoriums and clinics has been furthered largely by physicians and is still proceeding vigorously, with their support. The conclusion is inevitable that private practice as an influence in dealing with tuberculosis is recognized by the profession as inadequate; that during the last ten years it has been, relatively speaking, a static factor, so far as caring for numbers of patients is concerned; and that the chief means whereby more adequate facilities for the diagnosis and treatment of tuberculosis have been obtained during the past ten years has been by the establishment of public or semipublic facilities.

Consider now venereal disease, which, as has been suggested, is in some ways a parallel problem. The treatment facilities for syphilis and gonorrhea include private medical practice, dispensary clinics and hospitals (chiefly the clinics), quacks, and self-treatment. The fact that large numbers of patients treat themselves, particularly for gonorrhea, with medicines purchased on the advice of drug clerks or friends, and the persistent flourishing of quacks and advertising institutes, indicate that private medical practice and medical institutions taken together do not meet the situation. We all agree that treatment by quacks and self-treatment by patients are undesirable, but quacks persist, though the limitation of advertising and individual prosecution may diminish their numbers substantially and have done so in certain communities. Self-treatment is also prevalent. One may fear that self-treatment too often takes up the slack when the number of quacks is reduced. Doubtless the truth is that quacks and self-treatment can only be driven out when adequate substitutes are provided.

To be adequate, treatment facilities must fulfil six conditions:

1. Skilled Service. The medical service must be well trained in the diagnosis and treatment of these diseases.

2. Equipment. The physician must have at command technical equipment for diagnosis and treatment according to modern medical standards.

3. Organization. Facilities must be organized in proper correlation with the health departments of the

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* Read before the Section on Hospitals at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

local community and of the state, and with related social agencies and institutions

4 Accessibility The facilities must be available at such places and hours as do not involve undue sacrifice of time, money, or convenience to the persons who need to use them

5 Cost The cost of the facilities must be within the means of the patients

6 Sufficiency in Amount The amount of such facilities meeting the above conditions must be sufficient to cover 100 per cent of the need in any community

Let us consider private medical practice in relation to these six criteria of adequate treatment of venereal disease As to the first, practically all the existing supply of diagnostic skill is available from men giving part or all of their time to private practice When, however, we come to the test of equipment, it must be borne in mind that modern medical standards demand fairly elaborate equipment for adequate diagnosis and treatment of these diseases The cystoscope, various instruments for examination and treatment of conditions in bladder and urethra, laboratory facilities for Wassermann tests, a microscope for the examination of smears, a dark-stage attachment for the diagnosis of primary syphilis, sterilizing equipment, these have all been listed by committees of genito-urinary surgeons and specialists in syphilis in New York as minimum requisites of equipment for medical men working in clinics dealing with syphilis and gonorrhea Undoubtedly, therefore, they may be regarded as requisites for medical men treating these diseases in their offices When it is borne in mind that the cost of the instruments alone would run to at least $300, and might easily be double that sum, and that in many localities private practitioners have no local facilities for Wassermann tests, it may well be questioned to what extent adequate equipment for the diagnosis and treatment of syphilis and gonorrhea can generally be found in the private offices of men not specializing in the care of these diseases

As to organization The public-health services of a few states have begun to assist private practice by providing laboratory facilities, but, in general, private medical practice remains individualistic, unorganized, so far as relationships to public health or social welfare agencies are concerned As to accessibility, in the larger communities we find specialists in these diseases whose hours, as a rule, are not such as to be available to the mass of the population, who cannot afford to lose much time from work Office hours are fixed according to the demands of the clientele from which the specialists draw their main body of patients The mass of medical practitioners, not specializing, of course have hours which in many instances are accessible to all classes in the community, that is, hours during the evening as well as the day

Now as to the cost of treatment Syphilis and gonorrhea are expensive diseases The period of treatment is not short at the best and may be extremely prolonged So far as I can ascertain from physicians who are devoting special attention to genito-urinary diseases, they require that private patients with acute gonorrhea, for example, come for treatment three times a week for a period which is at least six weeks, and it may be several months before less frequent visits are allowed In this statement I am merely referring to the minimum which appears to prevail in the private practice of physicians who are regarded as experts in dealing with gonorrhea, but the office rates on which the following cost estimates have been based are those of the general practitioner, not of these specialists The cost of such treatment, including also the necessary laboratory examinations, etc, and estimating a very low rate for office visits, would be not less than $100 for the first six months, and might be very much more Furthermore, a large number of male and female patients with gonorrhea come to the physician in chronic stages, or when complications have arisen, requiring surgical operations This further adds to the expense The cost of medicines used for gonorrhea is also a large item, particularly at the usual retail prices levied by drug stores, being hardly less than $2 a week, and often much more

The treatment of syphilis, while requiring less frequent visits to a physician, often demands several injections of salvarsan, which would cost the patient from $10 to $50 apiece, and always requires a period of treatment such as to cost the patient at least as much, usually more, than has been specified for gonorrhea

The first infection of gonorrhea usually arises in the case of young men before the age of marriage, or between 17 and 25 years Fully five sixths of young men at this age, in any community, are working men or clerks, or are starting in business or professions, and their earning capacity is between $400 and $800 annually The expenditure of such a sum as $100 during a period of six months is a very serious item In the case of married men, or men with dependents, the annual income among the great bulk of our self-supporting population runs, even in large cities, only between $800 and $1,200 The expenditure of 15 per cent to 25 per cent of such an income for the treatment of one of these diseases is out of the question for these persons They can pay for some treatment, but not for enough or good enough treatment

The sixth criterion was the question, Are there sufficient facilities in the community, meeting the above conditions, to cover 100 per cent of the need? Has not the preceding discussion indicated the answer? Private medical practice has already given up attempting to meet the needs of "the poor" They go to clinics in the cities where there are such, and where there are no clinics they, for the most part, go to the drug stores Those who are above the poverty line, but who have only a moderate income, are, as the preceding discussion has endeavored to show, unable to afford the necessary minimum cost required by modern standards for treatment of syphilis and gonorrhea when this treatment has to be carried on in private offices In a word, treatment for syphilis and gonorrhea by private medical practice is too costly when it is adequate, and when it is not too costly to meet the needs of the whole population, it is likely to be inadequate

If ten years ago a similar analysis had been made of the facilities for the medical care of tuberculosis, a similar conclusion might have been reached Whether such an analysis was ever made I do not know As has already been indicated, however, the actual history has been that physicians themselves have labored to found sanatoriums and dispensaries for tuberculosis, instead of leaving these thousands of cases within the care of private practice Physicians have done this because they have recognized that there was a public need to be met, and that sanatoriums and clinics were the only means by which adequate treatment facilities could be provided The parallel with venereal disease is obvious Gonorrhea and syphilis are more prevalent than tuberculosis, and their medical treatment is more costly There is at least as much need to do for venereal disease what began, ten years ago, to be done for tuberculosis

As yet outpatient clinics have been established chiefly to "help the poor" and also to provide centers for teaching medical students and to increase the knowledge of practicing physicians The medical service has usually been voluntary on the part of the staff Can a high standard of efficient treatment be secured in such clinics, or does the organization of a service with considerable numbers of patients to be dealt with within a limited time necessarily mean hasty and slipshod work? Criticism of dispensary clinics for inefficiency has been forcibly voiced within recent years Unless it can be shown that clinics can be efficient, it is not worth while perhaps that they should be established on a large scale as public health measures for dealing with syphilis and gonorrhea

While within recent years criticism of dispensary clinics has been in the main justified, this has been an evidence of growth rather than of decline, and, in my opinion, sufficient data have been gathered to show that clinics can be efficient, if certain conditions are met

The fact that clinic efficiency can be tested and progress thus stimulated, because it can be measured, is, to my mind, perhaps the fundamental point During the last few years several methods of testing medical efficiency in outpatient work have been devised and applied in certain clinics The methods are chiefly two

First, the statistical method, which chiefly tests the amount of inefficiency If it is found that of 500 patients with acute gonorrhea, 40 per cent paid only one visit, obviously the clinic's inefficiency was hardly less than 40 per cent We cannot say that a patient has been given satisfactory treatment even if he has paid thirty visits to such a clinic We can say that he has been given ineffective treatment if he has paid only one, two, or three visits, unless the clinic can demonstrate that it has sent the patient into other good hands Thus the mere counting of the percentage of patients paying one, two, or three, four or five visits, and so on up to the high figures, is an extremely useful, though necessarily rough means of testing clinical efficiency and of stimulating progress Such tests have been conducted at the Boston Dispensary, Lakeside Hospital, Cleveland, Cornell University Medical College, and have been published The method is clear, the need for increase in efficiency is urgent Such tests should be routine everywhere They take little time and pay big returns It might be mentioned that in the male genito-urinary clinic of the Boston Dispensary the percentage of patients paying only one or two visits has been reduced as follows

In 1911-1915 this percentage was 47 and the percentage of patients paying more than five visits was only 32 5 In 1914-1915 the percentage of patients paying only one or two visits has been reduced to 40 per cent, and of patients paying more than five visits has been increased to 45 per cent In the evening work of the same institution, the results have been still better, for the proportion of patients paying one or two visits has been only 24 5 per cent, and those paying more than five visits 50 5 per cent I do not mention these results as being indications that satisfactory results have been reached, but that improvement is possible, and that progress can be measured

A more thorough and scientific test involves the actual examination of the clinical records by one of the physicians in charge Each patient must be judged as cured, improved, pending, lost (one-visit and two-visit patients are usually lost), and the percentages may be stated In the three clinics previously mentioned, such tests have been made and the percentage of cured patients varied from nine to twelve You may think this percentage small, and it is small, but gonorrhea is a difficult disease at best, so far as a layman can judge The comparison is not between the 12 per cent of cures in a certain clinic and 100 per cent of cures theoretically possible, but between 12 per cent in a clinic and the proportion of cures reached in private practice with a similar class of patients Who knows the latter percentage?

Under certain conditions I believe that outpatient clinics can be efficient And these general conditions might be formulated as follows

Skilled medical service is essential and in outpatient clinics we have the advantage over private practice that men who are especially skilled in dealing with gonorrhea and syphilis can take charge of the service, while men of less special experience can work under them and profit thereby Organizing medical service is a gain, both to the skilled men, who see more patients, and more selected patients, and to the men of less skill, who have an opportunity to learn

Second, the equipment for diagnosis and treatment Here the clinic gains over private practice on the economic side, because in a single clinic equipment can be used for many patients which would otherwise have to be duplicated in many private offices with proportionate increase of expense Pooling equipment is a great saving

The organization of the clinic in its medical and executive staff is essential to secure the best results for the prompt and careful handling of patients and for the keeping of accurate records The possibility of relating the clinic to external agents, such as the board of health, has been shown by Dr Warner of Lakeside Hospital, Cleveland At the same institution, and at the Boston Dispensary, the Massachusetts General Hospital, and elsewhere, the relation of syphilis and gonorrhea to social agencies and medical-social workers, has been shown Clinics must be *accessible* to the people who need them Most syphilis clinics are in the morning or afternoon, although evening clinics have been established in New York, in New Orleans, and in Boston Perhaps elsewhere there are evening clinics of which I do not know But any plan for the utilization of clinics as public health measures must include evening clinics It must also include clinics charging more than nominal fees, for there is no reason why patients who are self-supporting, who are working, should not pay for what they get, provided the fees are such that they can pay them

At the Boston Dispensary the establishment of evening pay clinics treating syphilis and gonorrhea has been undertaken within the past year The details of the service have been presented in papers before other societies and I shall not go into them except in a very brief way An evening clinic for men having gonorrhea, established in March, 1914, treated during its first year 632 patients who paid 6,809 visits

The fees charged have been 50 cents a visit, and prices for medicine somewhat above the cost of the materials The medical staff has been salaried The clinic financially has paid all expenses, including an estimated charge for lighting and heating The income from the clinic was $4,936 34 and the expense $4,622 89 It may be mentioned that the economic facts show the cost of the drugs, bought at usual drug-store prices, would amount to $2 or $2 50 a week The cost at the clinic to the patient paying 50 cents a visit and getting the same medicines is $2 25 a week It may thus fairly be said that the clinic does not take money that would otherwise go to the medical profession It would go instead to the drug stores The evening syphilis clinic, where the same fee has been charged, and the medical staff salaried, was established at the end of July, 1914, and during the first nine months treated 116 patients, paying 449 visits The income during the past six months has been $519 and the expense $313 55 It will be seen that this clinic was more than self-supporting, though if charges for rental and overhead supervision had been made the surplus would be much less Yet, even so, the clinic would meet expenses The amount of diagnostic and treatment work for gonorrhea and syphilis is so large, the numbers to be reached are so vast, that unless such self-supporting clinics are established, the expense will probably be too heavy to enable these treatment facilities to be provided Furthermore, it is better that patients should pay and come to a self-supporting clinic, than that the same patients should not pay and should regard themselves, and be regarded, as so-called objects of charity[1]

A point of the first importance now arises If clinics are to be developed as public health measures, clearly we cannot proceed on the same basis that we are accustomed to in most existing dispensaries We cannot expect physicians to give their services The medical service must be salaried There is no reason why clinics with volunteer service, especially in connection with teaching institutions, may not continue, but clinics established as public health measures for the purpose of providing adequate treatment for 100 per cent of the syphilis and gonorrhea patients in any community, must have salaried services Such clinics would provide a substitute for the quack, and for self-treatment, and would bring under medical supervision great numbers of syphilis and gonorrea patients who now receive no medical care Out of 200 visiting the evening genito-urinary clinic at the Boston Dispensary, thirty-eight had been treated by quacks and sixty-seven had had only self-treatment Fifty-two and five-tenths per cent of the total had had no previous medical attention of a reputable sort for the gonorrheal infection which brought them to the clinic While these figures are not necessarily representative, they are very suggestive

In the elaborate volume of testimony taken from experts by the British Royal Commission on Venereal Diseases last year, the need of a great enlargement of treatment facilities is brought out again and again and the increase of dispensary clinics is regarded as the chief means whereby this result may be attained Incidentally, evening clinics are mentioned by many witnesses at no less than seventeen different places in the volume of testimony

In establishing such clinics consideration must also be given to the provision of certain facilities at public expense Salvarsan for syphilis, in infectious conditions, for people who cannot afford to pay for the drug, is a proper matter for public subsidy Laboratory facilities for the diagnosis of syphilis and gonorrhea have already been provided in several states, in New York and doubtless in other cities, and is a proper subject for municipal or state departments of health or for city hospital laboratories If we face the facts, if we recognize the enormous amount of syphilis and gonorrhea in the community, if we believe it to be a fact that the mass of these cases do not now receive adequate treatment, that most patients cannot afford adequate treatment, then we must turn to organized medical service in clinics as a resource to provide this treatment The establishment of outpatient clinics on a large scale, administered as public health measures, for the diagnosis and treatment of syphilis and gonorrhea, is a practicable, necessary, and immediately desirable step in the campaign against these diseases

A STATISTICAL STUDY OF SYPHILIS

AS SEEN IN THE OUTPATIENT DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA HOSPITAL *

JAMES L WHITNEY, M D
SAN FRANCISCO

The following statistics are published for two reasons First, the Wassermann reaction has so changed our views as to syphilis in the last few years that all statistics collected previous to its use are rendered of little value Secondly, the present figures represent cases which have been perhaps unusually carefully studied with the possibility of syphilis in mind This disease is more common in San Francisco than in many other American cities, and for this reason clinicians in this region are constantly on the lookout for it There are probably few outpatient dispensaries where an equal proportion of the patients have been subjected to the Wassermann reaction For several years the children's department has observed the rule of a routine Wassermann in each case, the nerve department has demanded the reaction for almost every case, and the medical department for over half It has recently been decided for the medical department that thoroughness demands the routine Wassermann for each case Other departments have used this reaction to a less degree, being consulted usually for a given local trouble, and not for the general condition Any patient who seems to need general investigation, however, is sent for consultation to the medical rooms, the total number of such referred cases being large For example, most eye patients with conditions other than refractive errors are given the benefit of a systematic examination The result is that these figures may be taken to represent unusually closely the actual incidence of syphilis among patients in this locality

The question naturally arises how far these statistics represent average American conditions San Francisco has long carried the reputation of having an unusually large amount of venereal disease in compari-

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[1] In speaking of the conditions which clinics must meet in order to be efficient, I have gone beyond the useful standards announced by the Associated Out Patient Clinics of New York Their standards, however, relate primarily to technical equipment and much more is necessary in organization, follow up systems, etc, if clinics are to reach a proper standard

* From the University of California Medical School with the aid of a grant from the George Williams Hooper Foundation for Medical Research

son with the American average, and this is doubtless true At the same time we believe that clinicians here are rather more likely to suspect syphilis in every case than are those of some other places, and therefore succeed in demonstrating a larger proportion of the cases which exist An indication of this appears statistically For example, over 20 per cent of our syphilis cases are found to have bone and joint lesions which we believe to be due to the spirochete The contrast is striking when examination of the annual reports of a number of other clinics fails to reveal any, where the incidence of bone and joint syphilis is not insignificant as compared with the total number of diagnoses of syphilis The assumption of less syphilis in other communities would not explain so gross a difference in the proportions of its various manifestations

The diagnosis of skin lesions of syphilis is easy, and such cases are generally recognized, but it is the prime purpose of the following report to show, for a mixed clinic, what a large proportion of the patients with syphilis exhibit their disease in manifestations which we believe often go unrecognized

It may be added that each of the 7,885 case histories on which this report is based has been reexamined to be sure that the diagnosis was properly founded and that every positive case was recorded In Table 2 the figures for diagnoses are given as they stand in the card catalogue, including of course some cases in which the diagnosis was not actually proved, but in the more accurate analysis of Table 3 the facts are given in outline on which the diagnosis was based For this reason the totals of cases as given in Tables 2 and 3 do not agree in all details, though the divergence is nowhere great

TABLE 1—CASES OF SYPHILIS SEEN IN VARIOUS DEPARTMENTS OF THE OUTPATIENT DEPARTMENT FROM JULY 1 1912 TO MAY 1 1914

Department	Cases of Syphilis	Total New Cases	Percentage of Syphilis Cases to Whole Number per Cent
Whole O P D *	544	7 885	6 9
Nerve	82	363	22 6
Medical	370	1 695	21 8
Skin	134	892	15 0
Orthopedic	90	652	13 8
Genito-urinary	57	434	12 9
Eye	121	1 421	8 5
Throat Nose Ear	53	1 597	3 3
Children	26	890	2 9
Women s Clinic	21	915	2 3
Surgical	28	1 262	2 2

* The numbers for the various departments added together are of course greater than the total number of the whole outpatient department because many patients visited more than one department

Little need be said to explain the facts as they appear in the tables Table 1 gives for the whole outpatient department and for each of its divisions the proportion of cases in which syphilis was diagnosed to the total of new cases seen The nerve department leads, as might have been expected, with a proportion of 22 9 per cent, and the medical is a close second with 21 8 per cent The surgical department is last with 2 2 per cent, partly explainable by the fact already mentioned that in most cases the matter of syphilis was not investigated The percentage for the whole outpatient department is 6 9 per cent

Table 2 gives the diagnoses from the card catalogue of the various conditions interpreted as syphilitic The table is inaccurate in one particular, namely, that the figures for skin lesions are too low It sometimes happened that a roseola or other lesser eruption failed to be mentioned in cases with other manifestations, such as iritis, etc An unusually high percentage of extragenital primaries is shown (eight out of thirty-one), but the total number is too small to warrant any conclusion except that it may have been due to chance

TABLE 2—DIAGNOSES OF SYPHILITIC LESIONS AMONG 544 CASES OF SYPHILIS *

Diagnosis	Number of Cases	Proportion to Total Cases of Syphilis per Cent
Syphilis not localized or localization not given	191	35 1
Aorta Aneurysm	8	
Aortitis	5	
Arteriosclerosis	3	
Heart Myocarditis and myocardial insufficiency	14	
Aortic insufficiency	5	
Aortic and mitral insufficiency	1	
Total circulatory conditions	36	6 6
Bones Gumma	1	
Osteomyelitis	10	
Periostitis	19	
Joints Arthritis infectious type including destructive lesions		
General or multiple	9	
Elbow	3	
Finger	1	
Hip	8	
Knee	3	
Spine	41	
Arthritis toxic type	18	
Total bone and joint conditions	113	20 8
Eye Choroiditis and chorioretinitis	17	
Iridocyclitis	26	
Keratitis	14	
Nerve atrophy	21	
Neuritis and papillitis	6	
Ophthalmoplegia	7	
Retinitis	12	
Scleritis	3	
Total eye conditions	106	19 5
Nervous system Cerebrospinal syphilis	44	
Tabes dorsalis	29	
General paralysis	4	
Total nerve conditions	77	14 1
Skin Alopecia	1	
Gumma	9	
Macular papular pigmentary etc.	47	
Ulcer	5	
Primary	23	
Extragenital	8	
Total skin conditions	93	17 1
Ear internal	5	
Larynx	5	
Lip	1	
Liver	1	
Lung	2	
Lymph nodes	1	
Mouth	3	
Nose	12	
Pharynx	3	
Parotid	1	
Tongue	7	
Tonsils	1	
Testis	1	

* The totals are greater than 544 because many patients had multiple lesions

Table 3 is the result of the selection and study of all histories with a given diagnosis, in order to make out in how many of the cases with this lesion syphilis seemed to be a causative factor The conditions selected for this study were ones generally known to be the result of syphilis, or ones in which our experience seemed to point to a relationship not universally recognized

The cases are arranged in four classes according to the evidence in favor of a syphilitic basis positive, doubtfully positive, doubtfully negative, and negative (including presumably negative, that is, cases in which nothing suggested syphilis, but in which the disease had not been definitely excluded) The data on which the diagnoses were based is also indicated in brief Considerable conservatism has been employed in list-ing cases in these groups, a case being considered doubtful unless the proof was pretty conclusive Thus, among the doubtfully positive and doubtfully negative cases are listed many old cases treated for long periods as syphilitic, but without Wassermanns, or with negative reaction

In certain cases the point might well be raised that the coexistence of syphilis with a certain condition does not necessarily prove that the lesion itself is syphilitic That question cannot here be considered for each group in detail, to the extent of giving pathologic data or notes as to the behavior of the lesions under antisyphilitic treatment To apply a purely statistical method, however, it is evident that if syphilis is found present in a group of cases in far greater proportion than would be found in a similar group of normal persons, or of patients in general, the presumption is very strong that there is a causal relationship For example, about 7 per cent of our patients have syphilis, it must be more than a coincidence that 35 per cent of our lesions of the aortic valve, and 28 per cent of our arthritis cases of the infectious type occurred in patients known to be syphilitic

Several remarks may be made with reference to separate items in this table The high percentage of syphilis as the cause of aortitis and aneurysm is well

TABLE 3—PROPORTION OF CASES WITH GIVEN DIAGNOSES FOUND TO HAVE SYPHILIS

Diagnosis	Total Cases	Positive		Doubtfully Positive		Doubtfully Negative		Negative		Percentage of Positive and Doubtfully Positive Cases to Whole Number, %
		No	Remarks*	No	Remarks*	No	Remarks*	No	Remarks*	
Aorta Aneurysm	11	7	5 W+ 1 W— H+ 1 W— H—†	1	W— H+?†	3	3 W— H—	0		72 7
Aortitis	5	3	1 W+ 1 W— H+ 1 W— H—†	2	2 W— H+?	0		0		100
Dilatation	4	0		2	1 W± 1 W— H+?†	2	1 W— H—† 1 W— H+?	0		50
Arteriosclerosis	55	12	7 W+ 3 W— H+ 2 No W H+	5	2 W± 2 W—† 1 No W†	7	3 W—† 2 No W H+?† 2 No W†	31	13 W— 18 No W	30 9
Heart Myocarditis	41	11	9 W+ 1 W±† 1 W— H+	3	1 W± 2 No W†	6	1 W± 5 No W†	19	13 W— 6 No W	34 1
Disorders of heart beat	22	4	2 W+ 2 W— H+	2	1 W— H+? 1 No W†	3	3 No W†	13	8 W— 5 No W	27 3
Aortic valvular lesions	20	7	5 W+ 1 W± H+ 1 W— H+	0		0		13	9 W— 4 No W	35 0
Mitral lesions	71	5	3 W+ 1 W± H+ 1 No W H+	2	1 W±† 1 No W†	2	1 W±† 1 No W†	62	28 W— 34 No W	9.8
Eye Iritis	49	21	14 W+ 3 No W H+ 2 W— Iu+ 2 No W†	4	3 W—† 1 No W†	8	1 W—† 7 No W	16	8 W— 8 No W‡	51 0
Keratitis	27	14	11 W+ 2 W— H+ 1 No W	0		5	5 No W	8	2 W— 4 No W‡ 2 No W	51 9
Scleritis	11	3	2 W+ 1 W— H+	0		0		8	4 W—	27 3
Retinitis	43	11	8 W+ 3 W— H+	1	No W†	8	2 W—† 6 No W†	23	16 W—	27 9
Neuritis, papillitis	14	6	5 W+ 1 W— H+	0		2	No W†	6	6 W—	42.8
Nerve atrophy	30	16	7 W+ 3 W— H+ 2 W— Tabes 4 No W H+	2	1 W—† 1 No W†	10	2 W—† 8 No W†	2	2 W—	60 0
Choroiditis, Chorioretinitis	26	14	11 W+ 2 W— H+ 1 No W H+	3	1 W± 1 W— H+? 1 W—†	3	No W	6	5 W— 1 myopia	65 4
Ophthalmoplegia	13	7	7 W+	0		2	1 W— H+? 1 W—†	4	3 W—	53 8
Bones Osteomyelitis	36	7	6 W+ 1 No W H+	5	1 W— H+ 4 No W†	3	No W	21	4 W— 13 ‡	33 3
Periostitis	33	16	16 W+	4	4 No W†	5	3 W—† 2 No W†	8	4 W— 4 No W‡	48 5
Joints Arthritis, infectious type	236	56	42 W+ 2 W±† 10 W— H+ 2 No W†	10	2 W—† 8 No W (old cases)	21	2 W—† 1 W± 18 No W†	149	89 Tbc 22 Gonorrh 34 Ac infections 4 Rheum fev	27 9
Arthritis, toxic type	169	12	12 W+	2	1 W± 1 No W H+	3	2 W± 1 W—†	152	58 W— 94 No W	8.2

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* Under the head of "remarks" W+ means Wassermann positive, and the number before it gives the number of cases with this finding W— means Wassermann negative, W± means Wassermann doubtful or suggestive and No W means Wassermann not made H+ is history of syphilis definite H— No history H+? History doubtful † Other lesions present make diagnosis of syphilis probable or possible, or in some cases positive diagnosis made on the character of the lesion in question ‡ Traumatic lesions

recognized The proportion among heart cases is, however, probably considerably higher in San Francisco than in many other places, not only because of the presumed greater frequency of syphilis, but also because rheumatic fever is comparatively a rare disease in this region, a fact which I do not remember seeing in print, but commonly accepted here by the best observers

The high incidence of syphilis as a cause of eye lesions is in accordance with experience elsewhere, but is a fact not well enough recognized by ophthalmologists—at least not to the extent of their demanding routine Wassermanns in every case of the lesions mentioned below

The most striking statistical fact here brought out (shown in both Tables 2 and 3) is undoubtedly the large number of joint lesions giving positive Wassermanns, and in our opinion due to the spirochete This matter has been the subject of a special study by Dr W I Baldwin and me[1] to which reference is made for further discussion

In connection with certain of the cases of periostitis and osteomyelitis a statement should be made, which also applies to other conditions, such as iritis and keratitis, namely, that a history of trauma by no means rules out the possibility of syphilis In one very stubborn case of osteomyelitis following a bullet wound the patient was later found to have a positive Wassermann, and promptly recovered under appropriate treatment Discovery of a syphilitic condition was made in a number of eye cases in which the lesion at first was thought to be evidently on a traumatic or other obvious basis

CONCLUSIONS

If these figures convey nothing else, they should emphasize the value and necessity of the routine Wassermann examination For all hospitals this ought to be done on all medical, nerve, and obstetrical cases at least Where such lavish use of the reaction is not possible, the indications for it should at any rate, be very broad Patients who admit a previous syphilis, or who show strong evidence of its presence and who will probably be given antisyphilitic treatment in any case, need the testimony of the Wassermann, if anything, less than patients who do not otherwise suggest syphilis than by having a disease which may be due to syphilis, but need not necessarily be so Large numbers of cases could be cited in which the diagnosis has been cleared up by the routine Wassermann in the absence of any suspicion, this has often occurred after long periods of failure to improve on other treatment We feel that any obscure case of any kind ought to have a Wassermann This is especially true in cases in which the patient's complaints seem out of proportion to physical findings—in cases in which the diagnosis of neurasthenia is too often satisfactory to the physician

Of the classes of disease in which the Wassermann seems especially called for, may be mentioned all diseases of the central nervous system, all circulatory diseases, including cardiorenal and renal, all bone and joint diseases, all diseases of the eye involving nerve, retina, choroid, sclera, iris, or lens, all liver diseases, all chronic digestive diseases, all tumors, all cases involving lymphatic enlargement, and all constitutional or metabolism diseases

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[1] Whitney J L, and Baldwin W I Syphilis of the Spine Its Frequency and the Value of Its Characteristic Lesions as a Diagnostic Sign of Syphilis, The Journal A M A this issue p 1989

SYPHILIS OF THE SPINE

ITS FREQUENCY AND THE VALUE OF ITS CHARACTERISTIC LESIONS AS A DIAGNOSTIC SIGN OF SYPHILIS *

JAMES L WHITNEY, MD
AND
WALTER I BALDWIN, MD
SAN FRANCISCO

There is a general belief that syphilis of the joints is a rare disease This is the more remarkable inasmuch as the various forms of syphilitic arthritis have been clearly enough described, not only in separate papers, but in textbooks as well For example, Goldthwaite, Painter and Osgood[1] include in their textbook an accurate description of the various lesions which may occur, and give references to literature, but add as to frequency, that "there are great differences of opinion," and state of the toxic form (type of arthritis deformans) "This must be rare, we believe, in this country" On the other hand, many observers have believed that the incidence of joint lesions is high especially in hereditary cases Von Hippel asserts an incidence of 56 per cent, and Fournier of 40 per cent O'Reilly[2] contends that this disease is much commoner than is usually supposed

With regard to the frequency of syphilitic joint lesions in general, we shall here only refer to the paper by one of us (Whitney[3]) in which it was shown that among 544 syphilitics studied in the University of California Hospital, the diagnosis of syphilitic joint lesions was made in 83 or 15 2 per cent These joint cases are listed in Table 1

TABLE 1—SYPHILITIC JOINT LESIONS AMONG 544 CASES OF SYPHILIS

Infectious type (including both synovitis and destructive lesions)	
General or multiple	9
Elbow	3
Finger	1
Hip	8
Knee	3
Spine	41
Toxic type	18

It was further found that of all cases of arthritis seen, *18 7 per cent* gave evidence of being syphilitic Of the infectious type of arthritis 27 9 per cent were syphilitic, and of the toxic type 8.2 *per cent* These figures are striking, and show that syphilitic joints are much commoner than is generally supposed Even of the arthritis deformans type, syphilis seems to be a causative factor in a very considerable number

It will be noticed that among the joints involved, the spine is by far the commonest If the incidentally discovered abnormalities of the spine had been included which were not considered important enough to be mentioned as a separate diagnosis, the figures would have been far more striking

We have for some years in the University Hospital recognized as extremely common, and very characteristic, *certain* lesions of the spine found in syphilitics

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* From the University of California Medical School with the aid of a grant from the George Williams Hooper Foundation for Medical Research

* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association San Francisco June 1915

[1] Goldthwaite, Painter and Osgood *Diseases of the Bones and Joints* Boston D C Heath & Co 1909 p 441

[2] O Reilly Am Jour Orthop Surg 1914 xi 3

[3] Whitney J L Statistical Study of *Syphilis* as Seen in the Outpatient Department of the University of California Hospital The Journal A M A this issue p 1986

For this view Dr S J Hunkin of San Francisco is primarily responsible, who used to insist on this fact long before the Wassermann reaction gave him the confirmation needed to convince others

The following study was undertaken to put our strong impressions into the definite form of figures A series of 100 cases of syphilis was carefully examined for joint lesions, with special reference to the condition of the spine The cases were those of patients who happened in, day by day, to the medical clinic, and the only selection was in choosing only proved syphilitics, and in rejecting four who, though showing, as we believed, the characteristic spinal lesions, presented also complicating factors (in one case a gonococcus urethritis, in one a rheumatic fever, and in two a history of trauma)

The results of this study were rather more striking than we had anticipated, for out of 100 cases were found only twenty-six with perfectly normal spines (Cases 1 to 26), while six more are classed as doubtful (Cases 27-32)[4] The remaining sixty-eight cases had spinal abnormalities of some kind, and of these all but four were of a type which we have learned to consider more or less characteristic of syphilis

As to the nature of these arthritic lesions occurring in syphilis, we distinguish, as already indicated, the infectious and the toxic type The latter form is of the nature of what is often called arthritis deformans, hypertrophic and villous lesions being present, and less often atrophic changes Usually many joints are involved, the spine being among the commonest In such a case the spine is more or less uniformly stiff, and the Roentgen ray will usually show the characteristic osteophytes of hypertrophic joint-disease

Of the infectious type, two forms are easily distinguishable One is destructive, presumably a gummatous formation in the vertebral body (in other joints at the epiphysis), leading to a picture which closely resembles tuberculosis, and which, we feel sure, is commonly diagnosticated as such[5]

In this paper we shall not go into a detailed description of the toxic or of the gummatous varieties, since they have been accurately described by many observers

The second form of the infectious type, however, seems to have escaped almost unnoticed, and deserves more careful consideration This form consists in a synovitis without destructive change As occurring not uncommonly in the knees of congenital cases, this lesion has been long recognized, but the main contention of the present paper is its commonness in other joints, especially those of the spine, and its occurrence in acquired syphilis as well as congenital

In the spine this process attacks the synovia of the various spinal joints, leading at first to lessened motion from spasm, but as the acuteness of the process subsides, adhesions are usually formed which limit motion, and in many cases give complete fixation As far as can be judged, these adhesions are permanent, and are entirely unaffected by antisyphilitic treatment They may, however, be broken up by forcible manipulation, a measure which we have often advised when there was enough deformity to give a faulty posture with strain

When stiffening occurs, either from spasm or from adhesions, there is likely to be a characteristic deformity which may suggest an early form of Pott's disease This may be either a slight prominence of the spines, a flattened area, or even a shallow depression The question of whether the deformity is to consist of a forward or a backward bowing is largely dependent on the natural curves at the area involved, and the consequent directions of strain But the suggestion is here tentatively made that a second factor may be operative, namely, that the flexor spasm may predominate in case the process involves chiefly the intervertebral joints, and the extensor spasm where the articulations of the laminae are the main seat of trouble The former would tend to produce a convexity, the latter a concavity of the spinal outline Perhaps the most characteristic single type of deformity is a prolongation of the dorsal curve into the dorsolumbar region, where a concavity is normal, or a flattening at this level It is also to be noted that deformity may be altogether absent until tests of mobility show an area of more or less complete fixation

It appears that the spine offers ideal conditions for the formation of permanent adhesions, being composed of a series of joints which interplay and functionate in concert In case one part of this complex is immobilized by spasm, its function can be completely taken over by neighboring parts, and the affected joints are thus allowed to remain fixed until the adhesions have become permanent On the other hand, in such joints as the knee or wrist it is impossible to shift function in this way, and feeble adhesions from a low-grade process are almost inevitably broken down

It is characteristic of this condition that only a limited number of vertebrae are involved as a rule, thus distinguishing this form of stiffness rather sharply from osteo-arthritic changes, which in general are likely to be pretty evenly distributed throughout the back Reference to Table 2 will show that the stiffness frequently affects only three or four vertebrae, though the commoner occurrence is in from six to eight, and sometimes the whole dorsal region, or even the whole spine is affected Thirty-six of the 100 cases have lesions rather strictly limited in extent (Cases 33-68), twenty-five have a distinct localization, and in addition a lesser or greater stiffness of the whole spine (Cases 69-93) The localized areas we believe to be always of the infectious type, the general stiffness may be a lesser grade of the same infectious process, or may represent a (toxic) osteo-arthritis of the spine on which is superimposed the infectious local process Some of the cases (71, 81, 88, 92) have more or less well-marked osteo-arthritis or other joints to suggest that the spinal process is also toxic

The active synovitis is a relatively early manifestation of the disease Cases 35, 37, 45, 47 and 68 are examples of this early occurrence On account, however, of the persistence of the adhesions which so frequently follow, the characteristic deformity and stiffness appear to remain throughout life For this reason they are found in numerous cases in which the disease occurred years before, the Wassermann is negative, and there is every evidence that syphilis as an active disease is abolished This fact adds to the value of these lesions in the diagnosis of syphilis.

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[4] It is suggestive that nineteen of these patients had had early treatment in two cases indifferent, in seven considerable and in ten vigorous

[5] Closely allied to this group is the Charcot joint in tabes, which Eloesser of this city has duplicated experimentally by traumatizing a joint whose posterior nerve roots had been cut. We suspect that in some of these cases there may be, on occasion, an actual invasion by the *Spirochaeta pallida*, giving a mixed clinical picture, so that it is at times impossible to be sure whether the lesions are gummatous or purely neuropathic in character

namely, that it is found in old syphilitics, when every other evidence of the disease may be lacking

Pain is usually not a prominent symptom even in the early (active) cases, though we believe that a large part of the backache and "rheumatic pains" of secondary syphilis may be explained on this basis As compared to tuberculosis, the pain on motion and the sensitiveness, as well as the consequent spasm, are not striking, even in case of destructive lesions Roentgenograms of the spine in the synovial form are practically negative, showing no appreciable bony change in either early or late stages

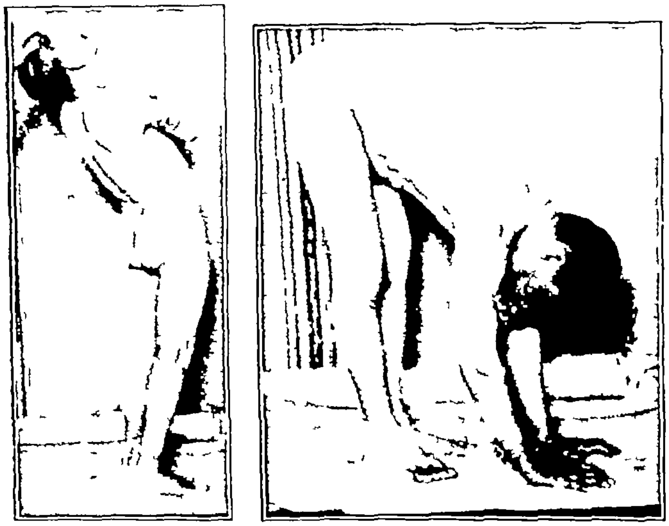

Fig 1 —Case 90 Tabes General spinal stiffness most marked in upper dorsal region Showing maximum hyperextension possible also marked hypotonicity (see Fig 2) which allows patient to put palms to the floor and even to bend elbows with knees kept straight

There is one more striking characteristic of these cases This is a frequently occurring hypotonicity of the ligaments and muscles of the uninvolved portions of the spine, and notably of the sacro-iliac joints and the hips Out of thirty-six patients with sharply localized processes, but otherwise normal spines, eighteen could touch the floor with their fingers, keeping the knees straight (Cases 51-68) Of twenty-five patients with general as well as localized stiffness, eleven could do the same (Cases 83-93) Of seven patients with evenly distributed spinal stiffness, two could touch the floor (99 and 100) Not a few of these could put palms to the floor, and two or three could then bend their elbows, still with straight knees The usual tests for sacro-iliac relaxation were invariably positive in these cases of hypotonus

This hypotonicity was described years ago by Frenkel as a sign of tabes, and it will be observed that several of the present series which had the most marked hypotonus were cases of tabes or cerebrospinal syphilis But this is by no means exclusively a characteristic of the cases with nerve syphilis Instead of calling it with Frenkel a sign of tabes, we are inclined to call it a sign of syphilis, which is usually more marked in nerve cases It is also to be remembered that a considerable degree of hypotonicity, to the extent, at least, of the ability to touch the floor easily, is by no means uncommon in normal people, and therefore cannot, when alone, be considered pathologic

The characteristic thing is not the hypotonicity alone, but this combined with a stiff back, or with a back showing areas of restricted mobility This combination of the two findings we have long regarded as almost sure proof of syphilis, and it is one of the points which we especially desire to emphasize in this paper, that in this we have a pathognomonic sign which is of quite as much interest to the general diagnostician as to the orthopedist The abnormalities here described are easy to demonstrate, especially after a little practice, and we have long felt that the routine examination of the spine as a part of the general examination deserves more general adoption

In addition to the series of cases of syphilis examined, it was felt that a series of negative controls was also called for Twenty-five patients were examined, who were thought to be certainly nonsyphilitic, and the lesions which we consider characteristic were found in none of them At the same time, it was recognized that it is more difficult to assemble a series of known normal patients than one of proved syphilitics A certain number of cases had to be excluded from both series because syphilis could not be absolutely proved on the one hand, or definitely excluded on the other Of these rejected cases, a certain number had localized stiffness with or without hypotonicity, but no single patient was encountered with this finding who did not also show some other suggestion of syphilis The impression gained from our experience with this sign in the last several years is strong that the combination here described is at least rare in nonsyphilitic persons

For the purposes of the present study we felt obliged to consider the Wassermann reaction as the deciding factor in the diagnosis of syphilis, cases being excluded from the positive series if the reaction was negative, unless the other evidence was indisputable We feel no doubt, however, that we have thus excluded a considerable number of syphilitic cases O'Reilly[2] agrees with Wysocki that the diagnosis of bone and joint syphilis must depend on the Wassermann test, and this represents the usual teaching From this opinion we must strongly dissent Apart from the results of treatment, we believe that a considerable number of cases of bone, and especially of joint, syphilis give a negative reaction Thus, in the past year one of us (W I B) has seen four cases of tibial osteoperiostitis with repeatedly negative Wassermann, which showed a

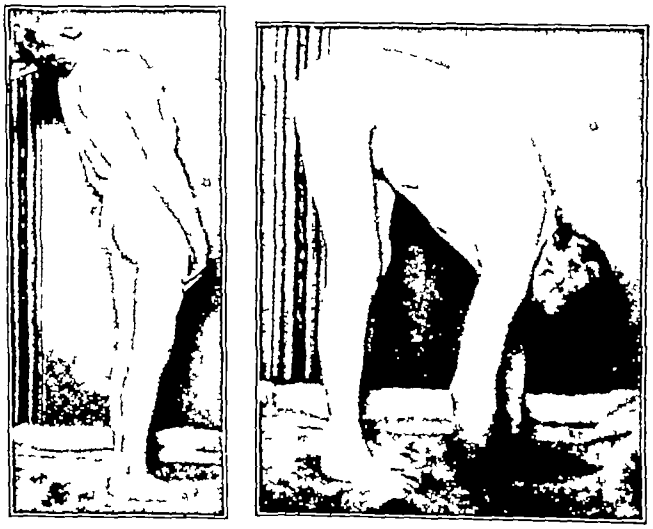

Fig 3 —Case 66 Tabes Marked stiffness ninth dorsal to first lumbar fair mobility elsewhere. Showing maximum hyperextension and hypotonicity (Fig 4)

TABLE 2.—SUMMARY OF FINDINGS IN 100 SYPHILITICS

Case No	Hospital No	Sex*	Age	Spine†			Other Joints	Hypotonicity‡	Probable Duration	Early Treatment	Wass Reaction¶	Remarks
				Cervical	Dorsal	Lumbar						
1	2917	♀	32	0	0	0	0	0	12 yrs	0	+	Keratitis
2	505	♂	33	0	0	0	0	0	8 yrs	++	+	Treated at U O H from start
3	3567	♂	42	0	0	0	0	0	20 yrs	0	+	Cerebrospinal syphilis
4	1513	♂	32	0	0	0	0	0	11 yrs	0	++	
5	670	♂	32	0	0	0	0	0	7 yrs	++	+	
6	12464	♀	36	0	0	0	0	0	18 yrs	0	++	
7	4721	♂	26	0	0	0	0	0	3 yrs	++	++	
8	13303	♂	26	0	0	0	0	0	6 wks	++	+++	Primary, treated at once
9	8286	♂	36	0	0	0	0	0	7 yrs	Little	+++	
10	14344	♂	28	0	0	0	0	0	3 mos	+	+++	
11	12013	♂	44	0	0	0	0	0	16 yrs	+	±	Undoubted history
12	14035	♂	30	0	0	0	0	0	4 wks	0	+++	Primary, untreated
13	11497	♂	29	0	0	0	0	0	14 yrs	+	+	Pills Three years
14	12896	♂	35	0	0	0	0	0	2 mos	++	+++	Vigorously treated since primary
15	14001	♂	43	0	0	0	0	0	19 yrs	+	++	Pills Three years
16	12118	♂	38	0	0	0	0	0	15 yrs	+	+++	
17	6851	♂	31	0	0	0	0	0	2 mos	++	+	
18	10006	♂	32	0	0	0	0	0	6 yrs	0	None	Undoubted history
19	11173	♀	33	0	0	0	0	0	12 yrs	0	+++	
20	14870	♂	30	0	0	0	0	++	3 mos	0	+++	
21	10508	♀	32	0	0	0	0	++	18 mos	+	+++	
22	12583	♂	36	0	0	0	0	+	14 yrs	+	—	General paralysis
23	13981	♀	16	0	0	0	0	++	4 mos	0	+++	
24	1129	♂	23	0	0	0	0	++	3 yrs	++	±	Treated at U O H from start
25	10-08	♀	30	0	0	0	0	+	1½ yrs	0	None	Syphilid
26	10990	♂	48	0	0	0	0	+	27 yrs	0	+++	
27	13328	♂	38	0	Sl 8-9	0	0	0	6 yrs	Little	+	
28	357	♂	36	0	Sl 4 9	0	0	0	9 yrs	++	+++	
29	10837	♂	15	0	Sl 9 11	0	0	0	6 mos	++	+++	Primary treated vigorously
30	11728	♀	21	0	Sl 8 11	0	0	0	5 mos	++	+++	Primary treated vigorously
31	957	♀	32	0	Sl 7 12	0	0	0	3 yrs	0	++	
32	604	♀	47	0	Sl 2-6	0	0	+	2 yrs +	0	+	
33	12222	♂	44	0	++ 8D 1L	(2 5) 0	0	0	8 yrs	0	++	
34	13346	♀	54	0	++ 7 11	0	0	0	20 yrs	0	None	Gumma of leg
35	10981	♀	50	0	++ 7 12	0	0	0	6 mos	0	+++	
36	9554	♂	35	0	+++ 9 11	0	0	0	8 yrs	0	+++	
37	5513	♂	31	0	++ 3 10	0	0	0	1½ yrs	+	+++	Salvarsan after primary nothing since
38	5115	♀	21	0	++ 3 10	0	0	0	3½ yrs	0	+++	
39	1415	♂	12	Sl	+ 3 7 + 12D 1L	(2 5) 0	+	0	Congenital	0	+	Old healed case Formerly synovitis of knees and destructive lesion of spine No evidence of activity at present
40	7212	♂	36	0	++ 6-10	0	0	0	15 yrs	0	—	Gummata of buttock, rapid healing after salvarsan
41	2621	♂	56	0	+ 1-6 ++ 6-12	0	0	0	5 yrs	Little	+++	
42	13184	♂	37	Sl	Sl 1 7 +++ 7D 1L	(2 5) 0	Sl hips	0	14 yrs	0	++	
43	13411	♂	26	0	+ whole ++ 3 7	0	0	0	9 yrs	0	+	
44	9630	♂	66	(1-4) 0	++ 5C 3D 0 4 12	0	0	0	50 yrs	0	None	Late syphilid, undoubted history
45	14668	♂	19	0	+ 4 10	0	0	0	2 mos	0	+++	Primary and roseola
46	12980	♂	13	0	++ 2-8	0	0	0	Congenital	0	+++	
47	13095	♂	25	0	++ 3 11	0	0	0	3 mos	0	None	Syphilid
48	14181	♂	22	0	++ 5 10	0	0	0	5 yrs	0	++	
49	13520	♀	28	0	+ 6-8	0	0	0	?	0	++	
50	2748	♂	50	0	+ 1 6 ++ 6 11	Sl	0	0	4 yrs	+	+	
51	10192	♀	41	0	+ 1 12	0	0	++	19 yrs	0	+++	
52	5057	♂	34	0	Sl 1 5 +++ 5 11	0	0	+	10 yrs	0	+++	
53	15029	♂	64	0	++ 5 11	0	0	+	11 yrs	+	+	
54	1290	♂	48	Sl	++ 7 11	0	0	+	17 yrs	+	+++	Cerebrospinal syphilis
55	11842	♂	41	0	+ 1-8 ++ 9 12	+ 1 5	0	++	15 yrs	0	+++	
56	12082	♂	29	0	+ whole ++ 6-10	0	0	+	5 yrs	0	+++	
57	3016	♂	31	0	+ whole ++ 6-10	0	0	++	2 yrs	++	+++	
58	6065	♂	34	0	++ 5-10	0	0	++	2 yrs	++	None	Treated U C H since primary
59	2204	♂	31	0	++ 9 11	0	0	+	14 yrs	Little	+	Tabes
60	2403	♀	25	0	+ 1D 2L ++ 2 7D	(2 5) 0	0	+	6 yrs	0	+++	
61	5227	♀	22	0	++ 4-8	0	0	+	2 yrs	0	+	
62	1338	♂	45	0	+++ 6-10	Sl	Sl hips	+	— yrs	0	++	Cerebrospinal syphilis
63	5674	♂	30	0	+ 7D 1L	(2 5) 0	0	+++	11 yrs	0	++	Cerebrospinal syphilis
64	14023	♀	27	0	+ 5 8	0	0	++	6 yrs	0	+++	
65	3489	♀	37	0	+ 7 12	0	+	+	18 yrs	0	+	Synovitis of knees and elbows
66	13340	♂	45	0	++ 9D 1L	(2 5) 0	0	+++	16 yrs	0	+++	Tabes
67	6276	♀	48	0	++ 4 10	Sl	0	+	30 yrs	0	++	
68	11455	♀	26	0	+++ 4-8	0	0	++	15 mos	0	+++	
69	11827	♀	36	Sl	++ 1 12	+++ 12D 3L	0	0	14 yrs	0	+++	Possible early tabes
70	14971	♂	35	Sl	++ 1 5 +++ 5 12	+	0	0	7 yrs	+	—	Undoubted history
71	3929	♂	49	Sl	Sl 1-6 +++ 6 11	+	+	0	13 yrs	0	+++	Arthritis of almost all joints most marked of hands
72	13661	♂	58	0	++ 1-6 +++ 7 12	+	0	0	5 yrs	Little	—	Undoubted history
73	9758	♂	40	Sl	+ 1 5 ++ 6-11	+	0	0	?	0	+	Gumma of clavicle
74	5417	♂	42	Sl	Sl 1-6 ++ 7 12	+	0	0	?	0	++	
75	12572	♂	21	+	+ 1 5 ++ 5 11	++ 1 2 + 3 5	0	0	33 yrs	Little	+++	Tabes

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* ♀ means female, ♂ means male

† In these columns 0 means no abnormality found, + means demonstrable stiffness, ++ marked stiffness, and +++ rigidity at the level of the vertebrae whose numbers are given

‡ In this column 0 means no abnormal hypotonicity, + means that patient could easily touch the floor with finger tips when knees were stiff, ++, patient could touch floor with knuckles +++, still greater degree of hypotonicity

¶ The Wassermann report does not always represent condition at the time of this examination sometimes it is taken from the record of a considerable time before

TABLE 2—SUMMARY OF FINDINGS IN 100 SYPHILITICS—Continued

Case No	Hospital No	Sex	Age	Spine†			Other Joints	Hypotonicity‡	Probable Duration	Early Treatment	Wass Reaction¶	Remarks
				Cervical	Dorsal	Lumbar						
76	9784	♂	43	Sl	+ 1-4 ++ 5-9 + 10-12	Sl	0	0	20 yrs	Little	+++	Tabes
77	5335	♂	34	Sl	+ 1 6 +++ 7D 3L	+ 4 5	0	0	11 yrs	0	+	
78	6577	♀	12	+	+++ 2-6 + 7 12	Sl	+	0	Congenital	0	—	Roentgen ray shows rarefaction of sacrum and ilia and destruction of head and neck of left femur
79	10668	♂	30	++	+	+	0	0	?	0	+	Roentgen ray shows destruction of cervical vertebrae 3 4 and 5
80	14800	♂	33	Sl	+ 5-12	+	0	0	?	0	+++	
81	1504	♀	60	Sl	+ 1 5 ++ 5 11	+	+	0	— yrs	0	++	Moderate general osteoarthritis
82	13852	♂	50	Sl	++ 1 12	+ 1-3 ++ 3-5	0	0	?	0	+++	Thoracic aneurysm
83	13160	♀	30	0	+ 1-6 +++ 7 12	+	0	++	9 yrs	0	+++	Insane
84	12891	♂	52	+	+++ 1 12	+	0	++	16 yrs	0	—	Tabes
85	14644	♂	60	Sl	+++ 3 10	Sl	0	+	35 yrs	++	+	
86	1591	♂	48	Sl	Sl 1-4 +++ 5 11	Sl	0	+	20 yrs	0	+	
87	37	♂	53	0	Sl 1-4 ++ 5-10	Sl	0	+	23 yrs	+	+	Cerebrospinal syphilis
88	2006	♂	61	+	++ 1-4 +++ 5-10	+11 D 5L	+	+	— yrs	0	+	Hypertrophic changes hips and fingers
89	12502	♂	56	Sl	+ 1 5 ++ 6-11	Sl	0	+++	35 yrs	0	—	Tabes
90	6980	♂	50	+	++ 3 9 + 9-12	Sl	0	+++	35 yrs	+	+	Tabes
91	8892	♂	40	Sl	+ 1-4 ++ 5-11	Sl	0	+	22 yrs	0	+++	
92	13139	♂	62	+	+++ 1 9 + 10-12	0	+	+	37 yrs	0	+	Hypertrophic changes in fingers
93	784	♂	50	+	+ 1 5 ++ 6-12	+	0	++	15 yrs	0	None	Tabes
94	11828	♂	50	Sl 1 5	++ 6C-2L	+ 3-5	Hips	0	23 yrs	0	+++	Hypertrophic arthritis of hips
95	1313	♂	58	+	++	++	0	0	16 yrs	0	++−	Roentgen ray suggests gumma of fifth lumbar
96	17	♂	55	0	+	SL	0	0	28 yrs	+	—	Undoubted history
97	13580	♂	34	++	+++	++	Sl hips	0	13 yrs	+	—	Flamboyant case of active synovitis—'poker spine'
98	12411	♀	43	+	++	+	0	0	?	0	+	Probably hypertrophic
99	710	♂	47	+	+	+	Sl hips	+	?	0	+	
100	7972	♂	51	+	++	Sl	0	++	18 yrs	0	+++	

typical clinical and Roentgen-ray picture of syphilis, and cleared rapidly on antisyphilitic treatment We are sure, on the basis of many observations, that a not inconsiderable percentage of cases of spinal syphilis of the types here described will give a negative Wassermann Therefore, as far, at least, as treatment is concerned, we are in the habit of paying attention to local and general findings even in the absence of a positive Wassermann It is here that a general consultant can often be of great assistance to the orthopedic specialist, since the demonstration of any other suspicious signs amply justifies a course of specific treatment in doubtful cases A brief summary of the findings in the 100 syphilitic patients is given in Table 2

Recapitulation—Among 100 unselected cases of syphilis were found

Twenty-six patients with normal spines, of whom seven showed hypotonicity

Six patients classed as doubtful, of whom one showed hypotonicity

Thirty-six patients with sharply localized stiffness but otherwise flexible spines of whom eighteen showed hypotonicity

Twenty-five patients with localized stiffness, and less marked general stiffness, of whom eleven showed hypotonicity

Seven patients with uniformly stiff spines of whom two showed hypotonicity

Nine patients showing evidence of toxic arthritis in other joints

Three patients with gumma of the spine

One patient with destructive syphilis of the hip

CONCLUSIONS

A localized stiffness of the spine is strongly suggestive of syphilis, being present in over half of this series, and rare in nonsyphilitic cases

Localized stiffness of the spine in conjunction with hypotonicity of the uninvolved spine and the pelvic and hip joints is almost pathognomonic of syphilis

It is found in obsolete as well as in active cases

It is a sign easy to demonstrate

A negative Wassermann reaction should not be interpreted as excluding syphilis in the presence of other signs which suggest joint syphilis

University of California Hospital

ABSTRACT OF DISCUSSION

Dr. H W Frauenthal, New York In a paper I read before this section last year I made the statement that in my experience in examining orthopedic cases uniformly for syphilis, about 15 per cent. of them gave a positive Wassermann, either blood test or from spinal fluid This has been borne out by other observers in France, Germany and Sweden I simply want to refer to an interesting abstract of a paper in The Journal, June 19, 1915 The characteristic thing about spinal syphilis is the absence of deformity The characteristics of Pott's disease are absent, while the Roentgen ray shows the increasing tissue, which is also characteristic of periostitis of the spine, and there is not the rarefied tissue from the absorption that occurs in tuberculosis of the spine (Pott's disease) I think there are a great many cases of tuberculous spines which are syphilitic, that is, a great many syphilitic spines and other joints which are treated as tuberculous, but in an institution in which uniform blood and spinal cord fluid tests are made, syphilitic joint disease is quite frequent I think that if it were a uniform custom in orthopedic institutions to look for syphilis in supposed tuberculous joints the positive Wassermann test would be obtained frequently One of the most important things combined with this is the fact that the men who taught twenty-five years ago that syphilis and tuberculosis were antagonistic will find that this does not prevail There is often a tuberculous infection on a syphilitic base, and in order to cure the tuberculosis, it is necessary also to treat the syphilitic infection I made this statement about ten years ago in a paper on syphilitic joint disease, before we had blood and serum determinations

Dr James L Whitney, San Francisco I had the pleasure of collaborating with Dr Baldwin in the examination of the series of cases here reported, and should like to emphasize two points as seen by an internist rather than an orthopedic surgeon The first is the value to both of cooperation between the specialist and the general diagnostician Many patients are doubtless treated as tuberculous, who might, on the basis of a thorough general examination, be shown to be syphilitic We have seen not a few such cases which, after long and fruitless mechanical treatment, yielded promptly to specific medication

The second point is the possible value of the spinal condition as an aid in the diagnosis of syphilis in general Diagnosticians are constantly on the lookout for signs which point toward syphilis Of such signs I have found slight irregularities of the pupil especially valuable in directing suspicion toward syphilis It seems to us, on the basis of this work, that the findings in the spine may prove to be equally valuable in this respect Over half of our cases of syphilis have this localized stiffness of the spine, and over 30 per cent have this stiffness combined with hypotonicity of spine and pelvis The latter finding we believe to be found only in syphilitics, and even in the absence of other confirmatory evidence, including the Wassermann reaction, should be a sufficient basis for antisyphilitic treatment

Dr. D B Phemister, Chicago I should like to ask which portion of the spine shows the localized stiffness, and if Roentgen-ray examination shows bony changes in this region?

Dr. Carl C Crane, San Francisco A few years ago it occurred to me that there were many children in the clinics who were returning regularly for braces, splints and various other appliances in whom the diagnosis of tuberculosis had been made They were not doing well, perhaps they were holding their own, they were pale, thin and inactive They were given iodids and mercury, and within a fortnight a mother, nearly frantic, came in crying, saying that she could not make Johnny use his crutches any longer, that he was jumping on wagons and walking on his sore hip The boy, with many others, improved very rapidly, became ruddy, strong and active, and shortly afterward dispensed with his crutches and all other apparatus This was simply an example of what was observed in many instances of so-called tuberculosis, of the hip in particular, and of other portions of the skeleton in general

Dr. Walter I Baldwin, San Francisco In answer to Dr Phemister's question, we have statistics of over 100 cases, collected mostly by Dr Whitney, which show exactly the localization of the stiffness in the spine I do not have time today to go into all the different phases of the diagnosis between syphilis and tuberculosis, but I have some lantern slides which illustrate this hip density with rigidity I can say, however, that it is most common in the cervical region

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Sanitary Survey—In a report submitted by the United States Public Health Service on a sanitary survey of ninety-six industries and trades in Indiana employing women labor, the following recommendations have been made Ventilation should be improved by forcing fresh air into all parts of the work room, eye shades or suitable curtains should be used where operators are required to face windows continually and individual drinking-cups and towels, and the providing of liquid soap were recommended

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SUBPERIOSTEAL RESECTION IN OSTEOMYELITIS

A CLINICAL AND EXPERIMENTAL STUDY *

D B PHEMISTER, M D

CHICAGO

It has been known since the time of Galen that the removal of a part or all of the shaft of a bone, which has undergone necrosis in osteomyelitis, may be followed by restoration of the missing portion Scultetus recorded a classic example in 1634, and a little later Delamatte and Vigarous reported regeneration of missing portions of the tibia No attempt was made to explain the method of regeneration until after the well-known experiments of Duhamel in 1741, showing the important part played by the periosteum in the formation of callus during the healing of fractures Subsequently it was attributed to the periosteum which, as was noted, was always detached from the shaft and left behind Isolated reports of cases continued to confirm this view, but no experimental evidence was offered in its support until the important work of Heine, who from 1830 to 1837 performed, in animals, a number of subperiosteal resections of the various bones of the body, with subsequent regeneration of the shaft in a certain percentage of the cases [1] Stimulated by this work, Langenbeck, who saw Heine's specimens, Larghi and other surgeons performed a number of subperiosteal resections of portions of diseased shaft, and of the ends of the bones in arthritis with varying degrees of success, as regards restoration of the excised portion

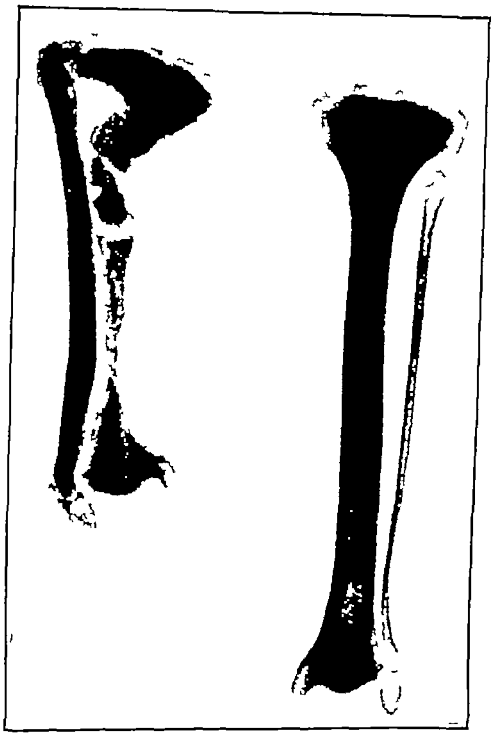

Fig 1—Subperiosteal resection 65 days old, and bone of opposite side

The experiments of Ollier[2] from 1858 to 1867 were the most extensive and important that have ever been made in the field of bone regeneration He asserted that only the cells of the inner or cambium layer possess osteogenetic properties, and obtained restoration after complete and partial subperiosteal resections of differently shaped and constructed bones, as the scapula, long bones and bones of the face When the entire length of a long bone was excised, regeneration of the shaft was fairly complete The epiphyses were incomplete, but sometimes possessed separate centers of ossification, and were separated from the shaft by broad fibrous epiphyseal lines Where epiphyses alone were subperiosteally resected, regeneration was usually complete

The bones of the skull afforded a striking exception in that the pericranium and external surface of the dura mater were unable to restore anything beyond very small portions Infection had different effects according to its extent If severe, it usually prevented regeneration of the missing portion, but if mild, new bone formation occurred, which was frequently exuberant, owing to the stimulating effects of the infection Age played considerable part, regeneration being much less constant and extensive in old animals

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* From the Department of Surgery, Rush Medical College

* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association, San Francisco, June, 1915

[1] Loosen Die Resection der Knochen und Gelenke, 1894

[2] Ollier, L Traite experimental et clinical de la regen des os, Paris, 1867

Ollier, Syme and others performed many operations on the basis of this work Nichols[3] of Boston was the first to make a careful study of its clinical application and bring it before the profession in America, where it has since been perhaps more extensively used than in any other country

Since the appearance of Macewen's work on the growth of bone, in which he asserted that the cambium layer of the periosteum has no osteogenetic function, there has been a great deal of controversy as to the origin of the new bone, not only in the healing of fractures and in bone transplants, but also in inflammatory processes and the restoration of their secondary bony defects There is a great confusion of ideas as to just what happens Some believe with Macewen that when a portion of the shaft is missing and the periosteum preserved, the regeneration is from an outward growth of the cells of the ends of the bone into the tube or groove formed by the periosteum, and from any small particles of bone cells which are separated from the shaft and cling to its inner surface In other words, all of the regeneration is from bone cells But McWilliams obtained regeneration from the periosteum after subperiosteal resection of entire ribs

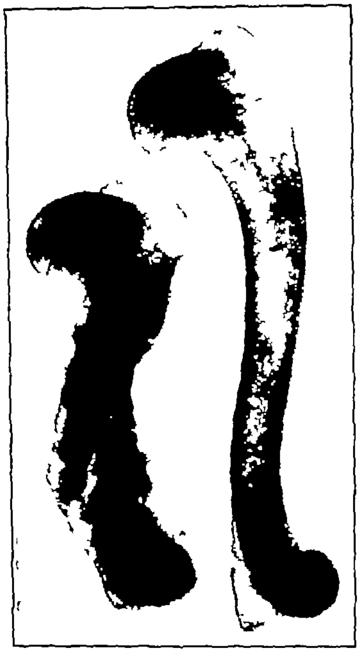
Fig 2 —Subperiosteal resection of shaft 52 days old and normal humerus.

Davis and Hunnicutt[4] conclude from their recent experiments that when bone is resected subperiosteally restoration of the defect is by outgrowth from the ends of the shaft, the periosteum acting as a limiting membrane, but if particles of bone are left behind or transplanted into the defect, the periosteum is stimulated by them and takes an active part in the formation of new bone I believe that bone cells are of importance as a starting point for ossification of the fibrous or fibrocartilaginous callus formed by the proliferating inner layer of periosteum, but the periosteum may also form callus without the presence of bone, being sufficiently stimulated by the demand of the weakened part for bony support

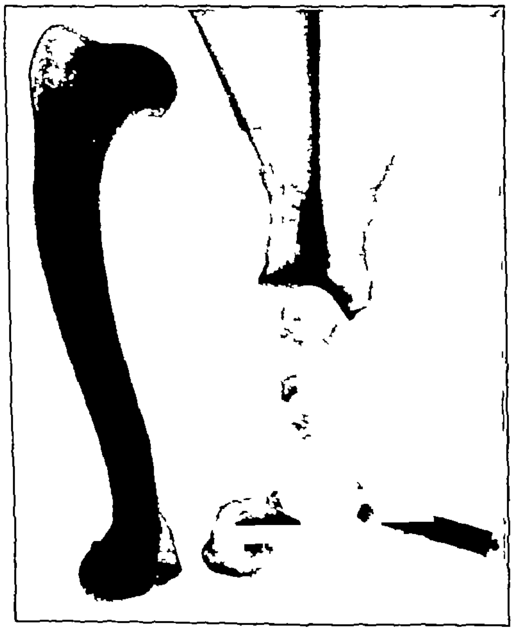
Fig 3 —Humerus excised subperiosteally in old dog and regeneration after forty six days

There is no uniformity of results after subperiosteal resection either in the healthy bones of animals or in diseased and healthy bones in man The full explanation for this has not as yet been determined, but there are a number of known factors of importance, chief among which are age, the presence or absence of infection, and the technic of freeing from the bone the periosteum or involucrum which is left behind

EXPERIMENTAL RESULTS

Regeneration after subperiosteal resection was tested in animals in the following sets of experiments, in which the regions excised correspond to those most often removed in osteomyelitis The periosteum was removed with a blunt instrument It comes away from the shaft with ease, but is much more adherent about the ends where the deeper portions are frequently not detached, or chips of bone are removed with it Separation through the epiphyseal lines was easily performed in very young dogs, but in older ones fragments of metaphyses were usually left behind because of the difficulty of division through the narrow and irregularly curved epiphyseal lines

1 Subperiosteal resection of the shaft was done in young animals before closure of the epiphyseal lines Nine operations were done, four on the tibia and six on the humerus There was a good attempt at regeneration of the tibia in all the animals when they were killed The youngest was 1 month old at the time of operation In twenty-six days a small shaft had been restored which was composed of fibrocartilaginous callus with a number of areas of ossification along its course. In a six-months-old dog thirty-one days after resection, a similar regeneration had occurred The new shaft consisted of a fibrocartilaginous flexible cord, largest toward the epiphyses, with numerous small areas of ossification along its course These may have started from scattered remaining bone cells, but the columnar mass of callus which was ossifying was so large that it must have formed largely from the periosteum

Figure 1 is of a specimen from a five-months-old dog sixty-five days after operation in which the entire shaft was removed, and no visible particles of bone were left between the two epiphyseal cartilages, although there may have been a few about the ends The separate areas of ossification are much larger than in the preceding experiment, and many have already fused Those remaining are separated from each other by narrow bands of fibrous or cartilaginous callus

It seems incredible that one should doubt the participation of the periosteum in the formation of the largely ossified middle portion which has no bony connection with either end or to assume that this entire mass formed from bits of remaining bone cells too small to be detached at operation

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[3] Nichols E. H Acute Subacute and Chronic Infectious Osteomyelitis Its Pathology and Treatment, THE JOURNAL A M A Feb 13 1904 p 439

[4] Davis and Hunnicut Am Surg 1915 lxi 672

One tibial resection in which extensive suppuration occurred showed at the end of twenty-eight days only a small amount of partly ossified callus near the upper end The fibula in each experiment underwent marked compensatory hypertrophy

Of the six experiments on the humerus, two were in pups 3 weeks old and were followed by the formation of a small irregular and shortened, largely ossified shaft at the end of thirty-five days All visible traces of bony shaft were excised In a 6-months-old animal, all of the shaft was removed except portions of the metaphyses at either end At the end of fifty-two days there was a newly formed irregular shaft about one-fourth shorter but much greater in diameter than the normal humerus on the other side (Fig 2) Separate centers of ossification are seen which have so fused that the bone is quite firm, thus enabling the animal to regain considerable use of the limb In three other animals, forty, sixty-eight and eighty days after the resection in which portions of the metaphyses were left, there was marked shortening and little attempt at regeneration Only a few spicules of new bone were present, with free mobility at the seat of resection

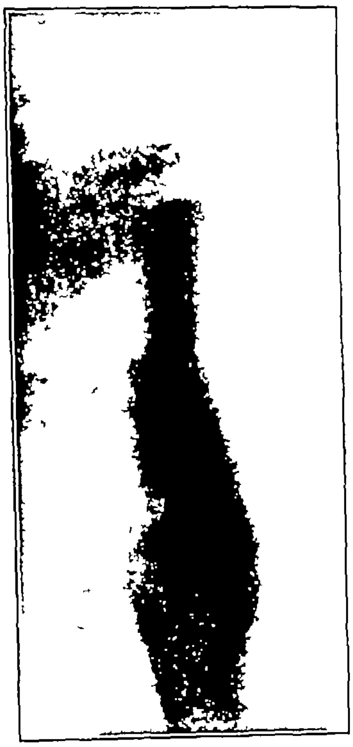
Fig 4 (Case 1) —Regeneration at end of three months

It is difficult to explain the differences in results, as infection was either absent or very slight in all of the cases, and the periosteum was always removed in much the same manner More osteogenetic tissue must have been left in the cases in which regeneration occurred

2 Subperiosteal resection of the humeral shaft in five old dogs was followed by a failure of restoration of the shaft in every case The experiments were 21, 39, 54, 65 and 78 days old, and in none was there new bone formation to any extent The remaining ends came close together, markedly shortening the limbs, and in the oldest experiment were united by partly ossified callus

3 Subperiosteal resection of an entire bone was performed in two instances In a 4-weeks-old pup the entire tibia was removed with portions of periosteum about the lower end which were not separated In twenty-seven days there was a large irregular, partly ossified, newly formed bone filling in the defect, except at the lower end where periosteum was removed It had no separate epiphysis at the upper end In an almost full-grown dog in which the humerus was examined after forty-six days, there was a flail limb with marked shortening and only a few nodules along the course of the excised bone (Fig 3) Mild infection occurred, and a small pocket of pus was present when the limb was dissected

4 Subperiosteal resection of the shaft with reimplantation of a support into the defect was performed for the purpose of determining the influence of the insert on osteogenesis of the surrounding sheath When a live transplant was used, as previously demonstrated, there was new bone formation both from the transplant and from the periosteum, which soon anchors the transplant into its new position In fifteen animals, the shaft of the bone (either tibia or humerus) was boiled and reimplanted, but in every instance there was more or less infection with fistula formation which either killed the animal or necessitated the removal of the too extensive implant in from one to three weeks Boiled wooden pegs were substituted for the bone in seven cases but always with resulting infection Dissection always showed the insert free in a suppurating canal with a thickened wall which on microscopic examination consisted of necrotic inflammatory or granulation tissue without any traces of callus Two animals in which the infection was less severe at the onset remained alive and were killed at the end of two months The dead shaft was easily extracted in each case, and the surrounding infected periosteal layer had produced only a few small nodules of bone along its course Evidently the infection destroys the remaining osteogenetic cells and consequently interferes with the regeneration In one nearly full-grown animal, about one third of the boiled shaft of the humerus was split off and reimplanted It healed in without infection in an oblique position with the upper end protruding beyond the epiphysis and when the animal died at the end of a month there was a well-developed shaft formed about the implant and along the course of the periosteum If it were not for the extent of the foreign body implanted, which so predisposes to infection, regeneration of the shaft might be hastened by the supporting action which is contributed

A review of the gross and microscopic findings shows that after subperiosteal resection of the shaft in young animals, the tube of periosteum partly collapses, and is filled with a blood clot The cambium layer of the periosteum, if removed, usually proliferates and forms an irregular column of callus along the course of the shaft Proliferation also occurs from any particles of bone that were detached and from the fragments of metaphyses, if they are not entirely excised Conversion of fibrous and cartilaginous callus into bone proceeds from the bony surface in the healing of fractures, and ossification of the callus, that is, transformation of its cells into bone cells, in these experiments, probably begins about small bits of attached bone, but this does not mean that all the mass of fibrous and cartilaginous cells originated from the bits of bone Histologic study shows them to come from the periosteum, and the great bulk of them to be transformed into bone cells It also appears that centers of ossification develop in this cartilage independent of fragments of bone, just as they do in the embryonal cartilage which preforms bone Sections through some of these areas fail to show the presence of old bone

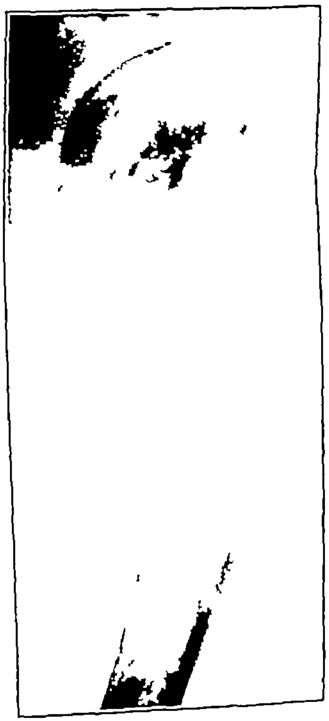
Fig 5 (Case 1) —Irregular new shaft with its cortex and medullary cavity at the end of two years

In the light of all the confronting evidence, it is difficult to understand the contention that periosteum is only a limiting and osteoconducting membrane, and that its inner layer of unossified cells does not possess osteogenetic properties Growth of bone from the ends was impossible in some of the experiments in which all of the shaft was removed, and the ends were limited by epiphyseal cartilage through which growth normally occurs from the shaft in the other direction, increasing the length of the bone by enchondral ossification Also it could hardly be expected that a tube of fascia lata containing a few bits of bone would give the same results if substituted for the remaining periosteum. Failure of regeneration occurred especially when the degree of infection was severe, as in cases in which the boiled shaft was implanted, owing to destruction of the remaining osteogenetic portions, and also in old animals in which less osteogenetic tissue is present about the periphery of the bone.

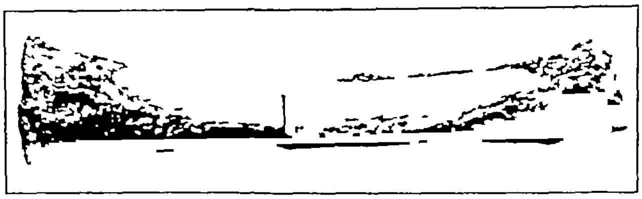

Fig 6 (Case 2).—Excised tibial shaft showing necrotic portion.

CLINICAL OBSERVATIONS

Clinical observations conform to a certain degree with the experimental results, although there is considerable difference between the resection of a shaft in a healthy dog and in human osteomyelitis. Subperiosteal resection of the noninfected shaft in young persons is followed by regeneration from the remaining periosteum and not by outgrowth from the ends of the bone.

CASE 1.—A girl of 10 had a cartilaginous exostosis of the upper end of the humerus for which a subperiosteal resection of 4 inches of the shaft to the epiphyseal line was performed. A strip of periosteum was removed laterally in the region of the tumor. Figure 4 shows the amount of regeneration at the end of three months. The irregular new shaft was formed from cells of the remaining periosteum, since its upper and lower ends differ little in size, and downward growth from bone at the upper end which was limited by cartilage was impossible.

Figure 5 shows the irregular new shaft with its cortex and medullary cavity at the end of two years.

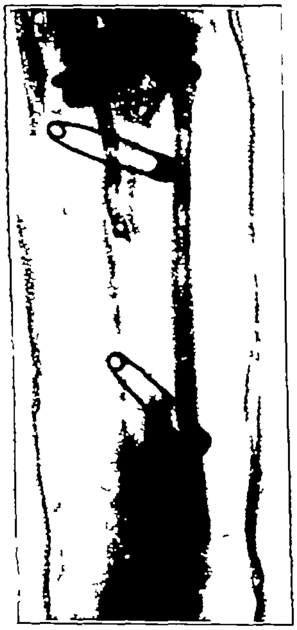

Fig 7 (Case 2).—Twenty-one days after subperiosteal resection.

Davison[5] reports a similar case in which 4 inches of the fibula which had been resected subperiosteally for use as a transplant was completely regenerated at the end of ten months.

In osteomyelitis, the inflammation, which usually starts in the end of the shaft, results in necrosis of trabeculae and pus formation in the medullary cavity, necrosis and penetration of a variable amount of the length and circumference of the cortex, and subperiosteal pus formation with more or less extensive separation of periosteum and perforation into the soft parts.

These destructive changes are soon accompanied by reparative processes. Proliferation occurs in the medullary cavity at the ends of the involved segment, and from any portions of marrow or cortex along its course which have not been killed by the infection. It also occurs along the surface from the periosteum and bone of the regions in which the cortex is not necrotic, and from some of the periosteum lifted up by the pus *after* it has perforated and escaped into the surrounding soft parts. More or less extensive areas of periosteum may be destroyed by the infection, in which case the underlying dead cortex is left without a covering. This encasing mass of osteogenetic tissue or involucrum is fibrous at first, but soon begins ossification in its deeper portion, in the region where it overlies living bone, and in two or three weeks its inner layer of spongy bone is demonstrable with the Roentgen ray.

In case the entire circumference of cortex is destroyed for a distance of from 2 to 4 inches, the surviving portions of periosteum nearly always form an involucrum about it, subsequent total defects after removal of the dead portion being unusual. Ossification of the newly formed involucrum proceeds rapidly from within outward, and is completed in from six to fifteen weeks, depending on the size of the bone and the duration of the acute inflammation. A little less time is required for sequestration of the necrotic portions.

Every case of osteomyelitis should be treated at the beginning by incision of soft parts down to the bone, and excision of a strip of the diseased cortex to establish drainage of the medullary canal.

After subsidence of the acute inflammation and the appearance of the involucrum, the method of getting rid of the necrotic bone must be decided on. In many mild cases, it is absorbed and no further operating is necessary. In others, the necrotic portion is definitely circumscribed and accessible, so that sequestrectomy is clearly indicated. Only in severer cases, in which the necrosis is extensive, does subperiosteal resection come into consideration. Its advantage is that, if regeneration is successful, the entire necrotic portion is removed, the occurrence of fistula and chronic bone abscess is avoided, and the disease is permanently healed as soon as restoration of the shaft is complete.

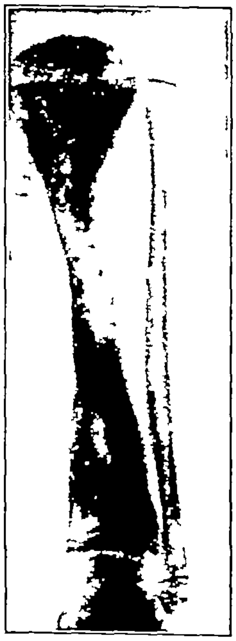

Fig 8 (Case 2).—One hundred and twenty-three days after operation.

Its disadvantages are that (1) there is frequently a failure of regeneration of the shaft, leaving a defect to be treated by subsequent bone transplantation, (2) convalescence is much longer than in favorable cases of sequestrectomy, owing to the greater amount of time required for regeneration of the shaft, (3) when there is only one bone in the extremity, considerable shortening and curvature may be the result, (4) it cannot be used in late cases.

Failure of regeneration, while sometimes difficult to explain, is due chiefly to the fact that an insufficient amount of osteogenetic tissue is left, or to its destruction by the infection. Early removal of the shaft before the formation of the periosteal thickening and during the height of the infection is particularly apt to be followed by failure of regeneration

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[5] Davison: Tr. Chicago Surg. Soc., 1915.

The most favorable time to perform the resection is between the third and eighth weeks according to the case, after the infection has subsided and the soft involucrum has formed It should be after ossification has started, but while the involucrum is pliable As much as possible of its spongy, ossified portion should be removed by means of a sharp chisel, as it hypertrophies and aids in the ossification of the fibrous involucrum, similar to the action of the bone cells and chips along the periosteum in the subperiosteal resections in dogs However, failure of regeneration after resection during this period is not seldom, as shown by the reports of Clopton and Nicholls[6]

The following case illustrates the successful use of this method

Case 2—A girl, aged 3 years, had been sick for twenty-three days with an osteomyelitis, involving the entire length of the tibia, resulting in pus formation at either end, which was drained at the end of one week There was still considerable discharge and a temperature of 102 F A small amount of ossification was present in the periosteal thickening, which extended along the entire length of the shaft An incision was made from one epiphysis to the other, and the thickened periosteum easily reflected anteromesially where an irregular strip of cortex was necrotic along the entire length of the shaft Laterally and posteriorly, the involucrum was ossified over the living cortex and was separated with more difficulty The shaft was sawed in two in the middle and the halves extracted Drainage tubes were inserted at the ends, and the wound closed

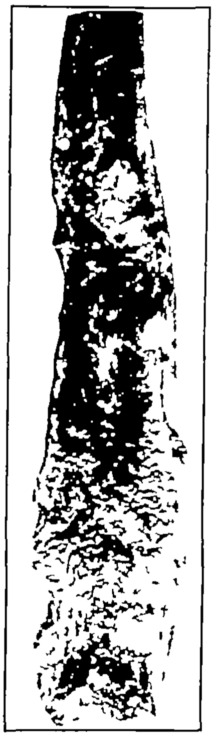

Fig 9 (Case 3) —Excised portion of shaft

The excised shaft (Fig 6) shows the smooth, anterior necrotic portion which is separated from the living bone at its margins by a groove filled with granulation tissue The living portion is covered by a thin layer of spongy involucrum, which was not all removed by the periosteotome The medullary canal showed some pus along its course There was considerable suppuration for a few days following the operation, after which improvement was rapid. Two small fistulas persisted at the upper and lower ends, which closed after curettage at the end of three months Figures 7 and 8 show the amount of regeneration twenty-one and 123 days following the operation The child has been walking on the limb since the fourth month, and recovery is complete without shortening at the end of two and three-fourths years

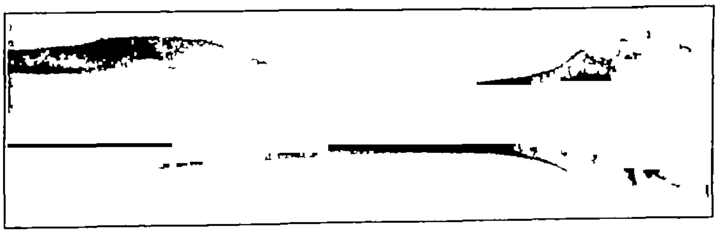

Fig 10 (Case 3) —Two years after excision

If resection is attempted late after the involucrum is too thoroughly ossified, great difficulty will be encountered in removing the deeper portion of the periosteum from the roughened surface, and few unossified osteogenetic elements will be left Consequently, there is very apt to be failure of regeneration, as illustrated by the following case

Case 3—A boy, aged 16 years, had osteomyelitis of the lower end of the fibula of nine weeks' standing, with abscess formation which had been opened and drained At operation the large involucrum was found to be rough and ossified, so that it was difficult to remove much of the periosteal covering, which was gotten off as best possible by means of a periosteotome About 6 inches of the shaft was removed down to the epiphyseal line (Fig 9) The wound, which was drained, healed in four weeks with little discharge

After one month the boy began using the limb, which has since remained well and strong Figure 10 shows the condition at the end of two years, with a defect of the fibula about 4 inches in length Fortunately, the malleolus is preserved, and it makes no difference to the patient

The cause of the failure is easily determined when the excised specimen is examined Its surface is very irregular and the involucrum is extensively ossified Microscopic sections from the cortex show that while the periosteum in many places was left, in most places it was removed with the specimen This was due, to some extent, to the irregularity of the surface, but by vigorous use of a sharp instrument, more osteogenetic tissue could have been left However, it is a question if such a thin layer, which had already undergone extreme hypertrophy, could have formed a new shaft

Verifying the results of animal experiments, osteomyelitis in adults is less suited for subperiosteal resection than in children

Case 4—A man, aged 45, had pneumonia which was followed by osteomyelitis of the tibia Four months after the onset a surgeon removed subperiosteally two-thirds of the lower end of the bone, including the epiphysis The wound had healed except for a small fistula when first seen at the end of nine months Figure 11 shows the small amount of irregular new bone which had formed along the course of the periosteum The late date (four months) at which the resection was performed, as well as the age of the individual, was responsible for the failure of regeneration

In view of the clinical and experimental data now at hand, showing the frequent failure of regeneration, subperiosteal resection should be reserved for selected cases of osteomyelitis in which there is extensive necrosis of bone, and particularly when it is located in areas inaccessible to operation, as the posterior part of the tibia Its use should be limited to parts of the body in which there is some other bony support, and should almost never be used where there is only one bone in the extremity, as later sequestrectomy gives better results in such cases

The operation should not be performed too early while the infection is severe, and before a soft involucrum has formed, nor too late after the involucrum is so ossified that an insufficient amount of osteogenetic tissue is removed

In case of failure of regeneration, the defect can best be repaired by free transplantation of bone, although a missing shaft of the tibia can be remedied by division of the fibula above and below and shifting it into the tibial defect, a method which was first used by Huntington

122 South Michigan Avenue

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[6] Clopton, M B The Diagnosis and Treatment of Osteomyelitis Surg, Gynec and Obst, 1915, xx, 6

ABSTRACT OF DISCUSSION

Dr. Thomas W Huntington, San Francisco With but a small personal experience, I do not seem to be in accord with prevailing opinions, as set forth by Dr Phemister In about 50 per cent of the cases in which I have attempted subperiosteal resections in osteomyelitis my results have been unsatisfactory The reason for this has been the presence of infection of more or less severity at the time of operation In a single case I avoided this procedure by resorting to bone transference, substituting the fibula for the tibia The case is in the literature, and the method has been followed by several other surgeons with uniform success In my own case the result is ideal, the young man has grown to adult life and suffers no inconvenience whatever from his former trouble One feature is of considerable interest, namely, that the transferred fibula, carrying with it its own nutrient artery and receiving an exaggerated nutrition from the remaining fragments of the tibia, hypertrophies rapidly and, ultimately, assumes the dimensions of the normal tibia The absence of the shaft of the fibula seems not to lower the efficiency of the limb to any degree At the time I made this effort I supposed that the idea was original, but on further search I find that an Italian surgeon, as early as 1860, resorted to an analogous procedure by transplanting the upper end of the fibula into the lower end of the femur His result was altogether satisfactory

Dr. J P Lord, Omaha In the discussion of Dr Phemister the statement is made that severe infection will destroy the periosteum That we grant, but it is my experience and observation that a great deal of this injury to the periosteum has been done by too rigorous treatment, for which the surgeon is responsible namely, in the too vigorous use of the curet and the too thorough application of strong antiseptics I will not amplify, but I wish that all the younger men would bear this in mind I have caused damage myself in this respect I am now more respectful of the tissues, and my later results are better The other point I wish to make is that in some of these cases we should simply open the bone When the medulla is reached guarded use of the curet should be made There are some who seem to disregard the endosteum and its functions, and its great power for assisting in the regeneration of bone Another feature of the treatment which I wish to emphasize is this Many surgeons continue to pack these cavities with gauze, and also dress these cases with undue frequency Their patient will have a rise of temperature every time a dressing of this kind is changed Sometimes I use gauze to control the hemorrhage for the first dressing but after that (because of considerable experience with children) I minimize the severity of the treatments Of course, I use the methods which you all use of enfolding the parts and minimizing the cavity I use iodized petrolatum 1 1 000, and I keep these troughs filled up with the petrolatum, and regeneration takes place under it and fills the cavity You can actually do these dressings with a child smiling, and in a perfectly good humor Now the parting shot I wish to make is a greater consideration for the regenerative power of the periosteum and endosteum, less surgery, and less vigorous treatment with antiseptics I think that in simple drainage, and more regard for the tissues, we will better serve Nature in her efforts at repair

Dr Leonard W Ely, San Francisco The presence of a cambium layer of the periosteum I doubt on the basis of a great many sections of normal and diseased bones Instead of a cambium layer of periosteum, we find pockets of marrow here and there under the fibrous layer These pockets of marrow are continuous by small channels in the bone with the marrow in the central canal Here we get back to the bone-forming function of the marrow We say that marrow forms bone, but marrow itself is not essential to the formation of bone any more than is an inner layer of periosteum In studying embryonic bones, we find a cylinder of cartilage transformed into bone by blood vessels pushing into it, carrying their bone-forming cells, and transforming this cylinder of cartilage into bone Embryonal bone contains no marrow, nor does cartilage that is being formed into bone Again, in the epiphyses of bones we see bone forming, as it already has formed in the shaft We see cartilage changing into the bone, but what changes it? There is no marrow there If we make serial sections of the epiphyseal cartilage, we find from the periosteum, from the marrow, or from the synovial folds, that the vessels are pushing in to the center When they reach the center, they begin to form bone Bone is formed by osteoblasts The osteoblasts are located, in adult life, in the marrow We do not know an osteoblast by sight We cannot identify any particular cell as an osteoblast We say when we see a peculiar appearing cell in a certain locality, "That is an osteoblast", but by itself we have no way of recognizing it, and we do not know whence it comes Here is our problem to solve What is an osteoblast and whence does it come? The osteoblast, whatever it is manufactures bone out of one of two tissues, namely cartilage or fibrous tissue The osteoblast is the active agent. The cartilage or fibrous tissue is the plastic material out of which bone is made. In a fracture of a bone, these marrow cells, whatever they are, do not bridge the gap immediately and manufacture bone, but they manufacture it out of cartilage on the outside, and out of the fibrous tissue which is deposited by the periosteum between the two bone ends

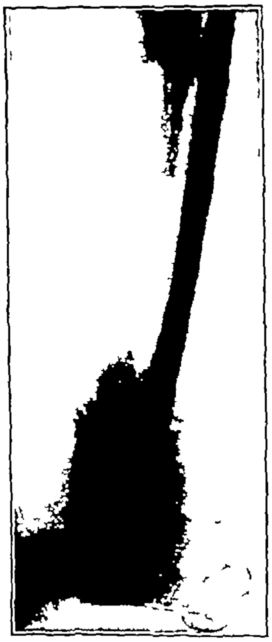
Fig 11 (Case 4) —Small amount of irregular new bone along the course of the periosteum.

Macewen put a ring on the outside of a bone under the periosteum and he finds that bone does not form over this ring Periosteum, he says, has no bone-forming function, but it has a 'bone-forming function" It cannot manufacture bone itself, but it is so much plastic material out of which bone is formed When he separates it from the osteoblasts, which are located in the marrow, by putting a ring inside it, there is no bone formed on the outside of the ring, because the active bone-forming agent cannot get at the periosteum to manufacture bone Stones do not build a wall The mason builds the wall, but he must have stones with which to build it The osteoblast is the mason

Dr. E W Ryerson, Chicago It is impossible to say too much in commendation of the work Dr Phemister has been doing to bring a little real knowledge out of the chaos in which all of our conceptions of osteomyelitis have heretofore been plunged I do not know of any subject, except possibly the time-worn subject of the treatment of tuberculous abscesses, in which so many different things and practices have been current in the past It is evident that to interfere with osteomyelitis successfully requires certain definite knowledge, which in the past we have not had Dr Phemister has been endeavoring to establish a time at which, for instance a sequestrum should be removed, and a time at which a necrosed shaft should be removed I have had three cases of successful regeneration of the entire tibia, after its complete removal in old osteomyelitis, and evidently I removed the shaft at exactly the right time. I have had a perfectly complete failure of regeneration in a tibia, where the entire shaft was removed and it is evident that I removed it at the wrong time We must study and we must learn a little more definitely the exact time at which to do this work

About the treatment of acute and subacute osteomyelitis I want to endorse some of the things expressed by Dr Lord We must not be too radical with our treatment of osteomyelitis, of which we see so many examples In the shaft of the tibia, for instance it should not be too radically treated An opening in the bone should be made practically the full width of the tibia, the entire length of the infected area, and not a bit of curetting should be done, nor any antiseptic treatment, even though the medullary cavity be full of pus Many of us have treated these cavities just as a dentist treats a cavity in a tooth, but that is not the proper way to do The cavity *in a tooth is an entirely and distinctly different* entity from that of an osteomyelitic cavity in a long bone We should simply drain, and drain by a method which is not ordinarily used We do not sew up any of these incisions Let them stay open, and do not put a dressing on them—do not put the dressing on the wound, but put the dressing around the wound, and let the entire wound stay open to the air without any dressing on it at all When the pus fills it up, roll the leg over and let the pus run off into the dressings, and irrigate it with a little normal salt solution Do not use any iodin or any other antiseptics Let the patient stay with the leg stretched out on a chair all during the day, in the sun, with no protection whatever over the wound, except a coarse wire gauze protector When treated *in this* way, these cases of osteomyelitis heal up almost magically, and I have been astounded to see the rapidity with which these large cavities fill up with bone in the relatively few cases in which I have used this method of treatment in the last six or eight months It is easily the best thing I have seen yet, and I reiterate what Dr Lord has said—do not do too much to your osteomyelitis cases As to the proper time to remove sequestrums, we have not as yet been able to formulate *any definite rule*

Dr **Roland Meisenbach**, Buffalo I have great respect for Dr Phemister's work, as I have followed it for a number of years However, I have also great respect for the endosteum when it comes to bone regeneration I am not at all convinced that the periosteum proliferates enough to regenerate an entire bone I believe that in many subperiosteal resections there remains some of the endosteum I have been impressed with the rapidity of the regeneration of the endosteum on several occasions, and I believe that the endosteum proliferates three to one as against the periosteum I base my opinion on my own observation in animal experimentation in which I have had occasion to section the cortex of the bone of a large number of animals and examine the sections microscopically I have been impressed with the number of osteoblasts found in the region of the endosteum, and as the endosteum is so closely allied to the bone marrow, it is easy to see why there is a great regeneration at this point rather than at the periosteum Since viewing the microscopic sections of cortical bone which Dr Ely kindly demonstrated to us in the laboratory, I am more convinced than ever before that many of the theories of bone regeneration will require *modification* I think the practical regeneration of bone is well shown in the cases of osteomyelitis in which most of the new bone comes from the endosteum and creeps along the sequestrum to meet some of the bone proliferated by the periosteum, thereby often forming an entirely new tibia I think these cases were placed on record several years ago In cases in which one has removed the gap in the long bone and in which one bridges over the periosteum, I believe that it is the endosteum that forms most of the new bone of the cortex *rather than the periosteum* This brings out an important point, that in osteomyelitis one should not be too anxious to remove the sequestrum formed, because it often acts as a bridge for the newly developing bone I think the stimulating effect of the staphylococcus on the endosteum accounts for the rapid regeneration in some of the cases, even those that are infected with staphylococcus What I have said can be shown in sections I have a series of sections with me which demonstrate the proliferation of bone in relation to the periosteum and endosteum, and make a good study They have a direct practical bearing on bone-graft work, and if one keeps these in mind, one will know why certain cases do better than others

Dr **Ethan H Smith**, San Francisco In this class of cases I consider the bone curet a necessary instrument at times, but frequently more abused than any other bone instrument in use Along with the uterine curet, I think that the bone curet is going to be *soon curtailed* in its use In operating on these cases we should do a clean-cut operation, with sharp instruments and see what we are doing, and in removing the damaged tissue do it neatly and carefully, with as little bruising, abrasion or rubbing in of pus or debris in the raw surface as possible I *think* that rough methods account for a great many disastrous results The time at which an operation should be begun in osteomyelitis is a big factor in these cases The doctrine still obtains that we are warned against *interfering* too soon in infections of bone and we were cautioned not to meddle with these cases until a sequestrum has separated from the sound bone This change, recognized by old observers, depends on the virulence of each case The remarks of Dr Ryerson about the proper method of opening and draining these cases are particularly timely and good, and I endorse that idea exactly

Dr **J T Rugh**, Philadelphia One point in regard to these grafts which are placed for deficiencies of various types *is that* the graft itself presents a certain degree of resistance and immunity toward infection Various forms of infection influence the graft differently, that is, a graft will have a certain degree of immunity toward one type of infection while with another type it will break down and absorb rapidly Further investigation and work along this line will show us a wider field of usefulness for the bone graft in the presence of infection and that we shall be able to utilize the graft as a stimulant to the proliferation of new bone in many cases in which some of the periosteum has been preserved, as in subperiosteal resection

Dr **D B Phemister**, Chicago My conception of the composition of the shaft of a bone is as follows It consists of a cortex of more or less compact bone in which are canals containing blood vessels and some connective tissue cells Its medullary cavity is lined and filled by a loose connective tissue reticulum in which are contained the bone marrow or hemopoietic cells and fat in varying amounts, depending on the age and particular bone This connective tissue reticulum is known as the endosteum The bone is surrounded by a connective tissue covering which consists of an outer thicker portion of white fibrous tissue and of an inner layer along the bony surface, of loose richly cellular tissue This covering is known as the periosteum and the inner layer, which is thickest during the period of growth, as the cambium layer of the periosteum New bone growth and bone repair occur by the proliferation and ossification of the cells *of these three portions, namely*, the endosteum, the cells of the canals of the cortex and the cambium layer of the periosteum They are known as osteogenetic tissues and their cells as osteoblasts The bone cells, which are situated in lacunae and closely surrounded by an abundance of lime salts, *do not multiply to any appreciable extent* To speak as Dr Meisenbach does of that portion of the osteogenetic tissue lying outside of the medullary canal as endosteum is a misnomer

I have tried *to show in these experiments* that the loose cellular layer lying on the bony surface and known as the cambium layer of the periosteum, if left behind in subperiosteal resections proliferates and plays an active part in the regeneration of the shaft In osteomyelitis the cells of this layer as well as those of the canals of the living portion of the cortex proliferate and form an involucrum about the shaft which at first is soft, but which soon ossifies In those cases in which a subperiosteal resection seems advisable it is best done *not too early, while the infection* is severe, and before the soft involucrum has formed, nor too late, after the involucrum has sufficiently ossified that it cannot be stripped away from the shaft In either case there is apt to be *too* little osteogenetic tissue left to regenerate the shaft

Visiting Nurses for Smaller Cities—To say every city above 5,000 should have a visiting nurse does not imply that they are impracticable for smaller cities There is no reason why with our new knowledge, the nurse *should not* supplant the old sanitary inspector, certainly the old time contagious inspector—Pub Health Com Minnesota Pub Health Assn

NOTES FROM A GERMAN MILITARY HOSPITAL WITH OBSERVATIONS ON GAS PHLEGMONS*

L ELOESSER M D
Assistant Professor of Surgery Medical Department Stanford University Surgeon to Reserve Lazarett IV, Karlsruhe
Baden Germany

SAN FRANCISCO

I arrived in Germany June 2 1915 After three weeks spent in visiting hospitals and such of my former acquaintances and masters as were not at the front, I succeeded, through letters to the Surgeon General of the XIV Army Corps, in getting an assignment as surgeon to the Reserve Hospital at Ettlingen in Baden The hospital occupies the buildings of a large new school for noncommissioned officers which were hurriedly completed at the beginning of the war and immediately turned over to the medical department It contains from 1 020 to 1,100 beds and is well equipped The local Red Cross, which was under contract to the military authorities to furnish supplies, was exceedingly liberal, equipping a small laboratory with microtome, etc, and granting all instruments and appliances asked for There was not the slightest deficiency to be felt in any way, even articles that one would imagine to be scant during the blockade, such as absorbent cotton and rubber goods, were not stinted

On first taking over the service, I found but few cases of surgical interest, the hospital having been used largely for infectious diseases, I had ten days in which to get things into running order for more active surgery, and July 3 we received our first large transport of 244 wounded They came fresh from the front, some within twenty-four hours after injury

The impression one gets of war surgery depends largely on one's position and the particular kind of warfare that is being waged at the source of one's material We got almost all of our wounded from the west front where the troops have been almost entirely under artillery fire since the rapid movements of the first few months of the summer and fall of 1914 Consequently wounds from small arms were rare, most of them were caused by shells and shrapnel

WOUNDS BY SMALL CALIBER BULLETS

Infantry and artillery fire make quite different kinds of surgery A man hit by an infantry bullet either falls on the field, or, if brought to the hospital his condition is, as a rule, determined by the importance of the parts injured—he is out of danger or dies quickly A man struck by a piece of shell is, unless the wound is entirely superficial, a source of anxiety and care for weeks and months to come It is the accompanying infection or the lack of it that makes the difference

There are exceptions to these general statements The modern small caliber bullet by no means always makes a small smooth wound The nature of its path is determined partly by the character of the bullet and partly by the parts struck Whether the bullets are pointed like the English, French and German bullets, or more snubbed like the Russian missiles, does not seem to make much difference as regards the character of the wounds What does make a difference is whether the points are smooth or whether they have been notched, dented, hollowed out or otherwise deformed—either by the soldiers themselves who by nipping the points of their bullets with pliers, or notching them with a knife, can make a dumdum bullet out of regular ammunition, or by more concerted arrangement—for there certainly have been instances in which soldiers were captured with dumdum ammunition that bore the marks of having been machine-made in regular factories A bullet with a nicked or hollow point no longer pierces, it rends and tears with explosive violence, the resistance at the point is such that the immense force pressing the greater hindermost bulk of the bullet forward causes its rear parts to burst from the casing, scattering the lead at angles to its original path and producing a small wound of entrance with a huge one of exit Evidence of a dumdum bullet can only be gotten from the unspent bullet itself, the nature of the wounds can lead to a guess, but not to certainty An ordinary bullet may become deformed by striking a twig or a metal button, or by being deflected by a stone or a wire fence and may act precisely like a dumdum, or it may shatter a bone and hurl the fragments aside and before it, and make havoc as great as any illegal projectile

The shape of the bullet is again of importance, in so far as those having their center of gravity near the rear tend to turn in their course when the point meets resistance, they tend to turn broadside when they strike, or even ply butt-end foremost, or turn butt-end foremost inside the soft parts, leaving an irregular and destructive track

Most of the warring powers encase their bullets in a steel or nickel-steel jacket The French use copper and theirs is perhaps the most humane of the small ammunition The copper jacket is tough, the bullets are usually little deformed, even when striking bone One often finds the sharp point bent around like a hook, the bullet still remaining whole The English bullet is perhaps the worst, the anterior third of its core is of aluminum, the remaining two-thirds of lead, it carries a deep groove toward the rear It consequently tends to fly asunder at its two weak points, the junction of the aluminum and the lead, and the groove Its center of gravity lies far back, this makes it prone to take a wavering or deflected course

The nature of the wound depends not only on the bullet, but on the parts struck, if a bone is shattered with much force, each splinter acts as a projectile in itself and tears its own way through the soft parts The cases in which a semifluid organ, such as the brain, or a viscus filled with fluid, the bladder or intestines, are struck with explosive effect, are of less interest The men probably all die on the field

HEAD INJURIES

Injuries to the skull are of three kinds—tangential, penetrating, and perforating Most injuries in men arriving at the base hospitals are tangential Men with penetrating or perforating wounds generally die before they get there Tangential injuries are generally trephined at the field hospitals, the splinters of the internal lamina that the projectile has driven before it into the brain, and the blood clots, are removed Although the wounds usually heal kindly, the patients are often permanently incapacitated, from organic or functional brain disturbances—hemiplegias, hemianopsias, deafness and severe neuroses Men with such

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* Reported with permission of the Medical Department, XIV Army Corps

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perforating wounds who survive often reach base hospitals for final operation It is wise to examine roentgenoscopically every fractured skull One often finds surprises—bullets or deep indentations and splintering of the internal lamina where none were suspected These skull cases should be watched a long time, they often develop late abscesses These have made me desperate They are frequently difficult to diagnose The men may have a constantly normal temperature Sometimes there are signs of pressure, and the heavy, stupid mentality and the drowsy stare may allow a guess at the condition Sometimes the pus shows a round shadow in the Roentgen plate This is of value When one opens and drains the abscess one's troubles begin The man may run a smooth and feverless course for weeks, the prolapse through the trephine opening, however, persisting, then comes a sudden high temperature, a progressive softening reaching far down into the ventricle, and death after one had congratulated oneself on having the man past danger Meningitis has been favorably influenced by repeated lumbar puncture, and many recover under this treatment Careful revision of the wound at the first operation and careful removal of all foreign bodies and splinters of bone, even at the cost of some additional trauma to the brain, might prevent some late abscesses But this is more easily said than done Carefully to revise a mangled and bleeding brain is usually a consummation devoutly desirable, but unattainable We should do what we can, however, the brain seems to stand more after a fresh trauma than it does at later operations when we traverse inflamed and morbid gray matter

For defects on the vault of the skull, the osteoplastic closure of Garre with a flap of bone shavings from the outer lamina and periosteum is sufficient If there is danger of postoperative adhesions between the cortex and the bone, one can turn the flaps over so that the fascial side rests against the brain and the inner periosteal side with the bone-shavings looks outward This form of closure makes a free transplant of bone unnecessary except where there is a deep defect in the forehead which looks badly unless filled out level with the surface Here the graft may be taken from the rib in preference to the tibia, the bone of the rib is softer and if one splits it along one edge with a chisel, leaving a periosteal hinge along the other, one can trim it readily to any desired shape with a scissors If the defect is deep, bits of muscle may be left adhering to the rib, or one may fill out the rest of the hole with fat from the subcutaneous tissue of the chest

CHEST WOUNDS

Wounds of the chest do not give as little trouble as is popularly supposed Ritter called attention to this at the Congress of Military Surgeons in Brussels Shortness of breath and general weakness often last a long time, and the physical signs—lack of respiratory movement, shrunken chest, with several intercostal spaces tender to pressure and retracted, especially on inspiration, dulness, with impaired or wanting breath sounds and weak vocal fremitus — remain unchanged for months, even when aspiration gives no fluid The hematothorax makes a thick pleura and in shrinking contracts the chest

Bloody sputum is usually taken as a sure sign of a wounded lung It is not necessarily so One sees numerous men whose chest wall has not been perforated, but who have bloody sputum for several days after injury, and who show dulness and impaired breathing over parts of the thorax corresponding to the seat of the wound If the upper part of the chest wall has been injured, we may find dulness and absent or weak breathing here alone, with the lower chest free, thus ruling out the presence of hemorrhage into the pleural cavity These are tangential injuries of the chest with contusions of the lung, perhaps merely a local pulmonary congestion due to lack of respiratory movement in tender parts of the thoracic wall

WOUNDS OF EXTREMITIES, NERVES, VESSELS

Gunshot wounds of the extremities have increased in gravity with the increased power of the modern small arm *Injuries to the nerves and blood vessels* are more frequent Nerves and vessels cannot evade the modern bullet The extent of the injury depends, I think, much on the position of the member when struck If an elbow is extended with the brachial vessels and the nerves on the stretch it seems reasonable that the bullet itself may make but a small lateral rent, but that the tenseness of the vessels and the sudden jerk of the muscles may complete the tear If the elbow is bent, the nerves and vessels loose, the damage will not be nearly so great It is not a question of nerves or vessels evading the bullet, it is a question of their damaging themselves by their own tension under its impact

The path of the bullet is almost always surrounded by a large, hard and tender infiltrate Sections show extensive hemorrhage and necrosis of the muscles What causes the wide necrosis I do not know The size of the intermuscular and intramuscular clot is often surprising, even where no visible larger vessel has been injured It may be as big as a fist or the flat of the hand In a few weeks the clot and the infiltrate shrink to a scar that crunches like bacon rind under the knife, and turns its edge, and in shrinking strangulates the nerves Palsies begin to appear, particularly radial and peroneal ones, together with agonizing neuralgic pains that are referred to the peripherally innervated parts, the fingers, the hand or the foot They are severest at night and wear the men out from lack of sleep One finds atrophied muscles, partial reaction of degeneration, hypesthesias and paresthesias and a locally increased sweat secretion At operation the nerve is seen to be unsevered, or partly so, the sheath, however, is 2 to 3 mm thick, red or yellowish-brown, and hard, the scar and infiltrate reaching a hand's breadth or more beyond the path of the bullet One should not content oneself with dissecting the nerve out of the scar, but should split the thickened sheath and dissect out the separate nerve-tracts according to Stoffel If this is done thoroughly and carefully (it is not easy) the palsies usually disappear in a few days and the pains cease, these, however, less rapidly than the palsies, I have found

FRACTURES

Fractures from the small caliber bullet, even where the bone is widely shattered, usually heal promptly, often with an exuberant callus, because of the amount of extravasated blood I have been struck by several cases that resemble one at the San Francisco City and County Hospital of a burglar who had been shot in the leg and who, besides a comminution, showed a spiral fracture of the tibia that could not have been caused by any form of direct violence One of these men had a bullet wound of the thigh with a typical spiral fracture of the upper third, without any splintering of the bone, others had comminuted fractures where the bone had been struck by the projectile, and above this pure spiral fractures, or again, there was a comminution below and the upper fragment of the same break ended in a spiral, this being the most frequent The twist must have been produced by indirect or muscular violence simultaneously with the shattering of the bone lower down, perhaps by the man's fall

The question of *how to transport fracture patients* is still unsettled A well-fitting plaster splint with windows for dressings is the best, but is often impossible There is no time for applying plaster hip splints when the wounded pour in after a battle, several hundred at a time, often the men at the front are not trained in the application of plaster We must remember that all sorts of medical men are there doing their best — young and old — dermatologists and ophthalmologists — all sorts of men, many of whom have not handled plaster since their student days Splints as usually applied are more of a balm to the surgeon's conscience than use to the wounded The number of suggestions for splints and dressings coming out in the journals every week make it evident that this problem has not yet been successfully solved

WOUNDS BY ARTILLERY PROJECTILES

So much for wounds from small caliber bullets I have put them in a class by themselves because they *are* a class by themselves It is the *wounds from shells and artillery projectiles* that make one realize what war is—make one thank God that our country has been spared such scenes

A man ought to put up with a great deal before inflicting such tortures on his fellow beings, even though he may not care about his own person Genghis Khan, Tamerlane, the Malayan potentates, Nero, Eogel's old Cossack Tarass Bulba—whatever stands in our eyes for cruelty—had no such thoughts as these Gouging out of eyes, the Philippine "water-cure," thumb-screws, the rack, these were matters of hours or a few days at most, but gas phlegmons and tetanus and hospital gangrene by which a man rots away for days and weeks in his own filth, where shattered bones stick out through green and quivering muscles, where pus and gangrene travel up by inches, and not even a kindly stupor comes to a man's aid, these have been reserved for modern humanity to inflict

Not only small arm ammunition but shells have individual differences in structure Shells seem to burst in three ways according to the steel used in them Those used at the beginning of the war broke into large more or less irregular polyhedral chunks, something like lumps of coal The pieces were often very large, as large as a fist or larger one sees them rarely now Another kind also bursts into lumps, but the lumps are smaller and jagged and often full of little blow-holes, like lumps of coke These are worse than the first kind in that they carry more dirt with them, rags of clothing, etc, bury themselves in the irregularities of the fragments and are caught and entangled by the sharp projections The third kind, which are of our manufacture I think (evidence of kindly good will), do not burst into lumps but into jagged slivers with saw edges, some straight, others curled The small ones are often shaped like Indian arrowheads or flint knives This is evidently a tougher kind of steel

Besides the wounds from shells one finds shrapnel wounds, which occupy a position as regards infection midway between small arm ammunition and the shell, wounds from fragments of bombs and those from accidentally exploding percussion caps The caps, which usually explode while being handled, cause mangling injuries with much tearing and laceration because of the nearness at which they act

SHELL WOUNDS ALWAYS INFECTED

Every wound from a shell is infected This may be taken as a rule without exception The infection may not be severe and the wounds may occasionally heal without suppuration, just as bits of uniform (surely never sterile) often heal in a wound without suppuration Generally, however, the infections are severe, and every one who has been here since the beginning of the war says that they are becoming graver and graver as the war goes on Why, I do not know, except that the uniforms are becoming dirtier and dirtier I suppose, and the ground more and more impregnated with the products of decaying cadavers Tetanus, which was frequent and severe at the beginning of the war, has practically disappeared since all wounded are given prophylactic injections of serum at the first dressing

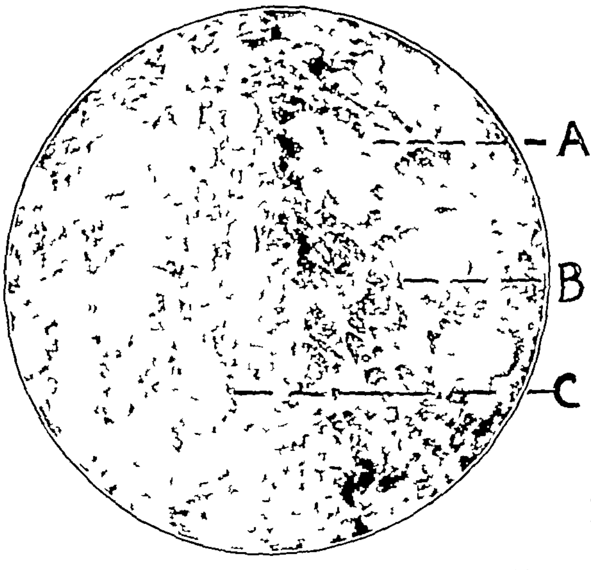
MUST BE TREATED ACTIVELY

The teachings of von Bergmann—the "Hands off"—so great a blessing for gunshot wounds, have been a bane to the treatment of artillery wounds "Hands off!" "sterile dressings" and "splints" had been so drilled into students, had become so intuitive, that men forgot that there is a difference in wounds of battle—that a smooth shining bullet and a jagged piece of steel carrying dirt and stones, and bits of uniform and underclothing with it are not the same thing It is only recently that there has been a general awakening to this fact The mistake has been that artillery wounds have not been treated actively from the first—opened widely, all the nooks and crannies opened, and the dirt removed These wounds are the most deceptive, and it was the more difficult to arouse field-surgeons to their importance because gas-phlegmons and gangrene do not begin to show from the first There are usually two or three days of quiet, the wounds are reactionless and the fever which generally accompanies artillery injuries may disappear for a day or two after the first twelve hours Then the inflammation breaks loose and the phlegmon runs wild Men are kept a day or two in a field hospital, their condition does not seem to be precarious and they are transferred to the base, out of sight of the field surgeon by the time the phlegmon has really begun, so that his sins of omission may rarely come to his eyes

GAS PHLEGMON

Gas phlegmons are of several kinds They are better termed phlegmons than gangrene, the gangrene is not primary, but secondary In the one kind the whole limb is immensely swollen and tender, dusky brownish-yellow, hard and tense as an inflated automobile tire, and tympanitic on percussion The wound edges pout and show a dry muscle underneath, covered perhaps, with a greenish fibrinous membrane, from the wound comes a little thin exudate with an ammoniacal, urinous smell When incised the muscles burst from their sheaths like a tire from a casing, they crackle under the knife and one can squeeze gas bubbles from them with the fingers as from an edematous lung They are dusky in color, perhaps greenish, from between them, far up and down the limb runs a watery, stinking pus The veins are engorged or stopped by black blood clots and steeped in the same thin pus The outer wound, which may be no larger than a half dollar, shows astonishingly little of the awful destruction beneath it In fresh cases it is usually easy to find and extract the foreign body, it falls into one's fingers without one's particularly looking for it The gangrene usually comes later and is a consequence, I think, of the extensive venous thrombosis If all goes well, the next day sees the muscles that were previously tense to bursting, soft and black but still full of gas, and on the day after, they begin to slough A huge amount of sloughs comes from the wounds — green ones from the muscles and fascia mixed with bright ochre-colored pieces (what these are I do not know) and much foul pus Once sloughing begins the wounds clean themselves rapidly, in a week or ten days they are usually covered with healthy granulations and the patient is feverless

The second kind of phlegmon is more superficial and is characterized by a yellow gelatinous edema with which the subcutaneous tissue is soaked, especially around the veins, which are often thrombosed Here there is a more extensive moist gangrene of the skin, but the deeper parts are less affected After a day or two thick green pus takes the place of the yellow edema, and if one runs through the skin along the course of the veins with a pair of scissors one can follow the pus half the way, sometimes all the way, up the limb



Gas phlegmon of the muscle A, gas bubbles, B, muscle fibers, mostly necrotic, C, blood clot and purulent infiltrate

Gas phlegmons should be laid wide open, not incised and drained, but *opened,* so that all the affected parts lie bare and there is nowhere to place a drain This should be done at one operation It is often good to cut the muscles square across, the ends retract and leave the wound agape One cannot make multiple small incisions and wait and follow the pus as it appears It comes too quickly The limb becomes gangrenous, or the man dies, or both, while we wait In order to prevent the pus traveling up along the veins it is often well to cut the main subcutaneous ones across considerably above the wound, in a phlegmon of the leg, for instance, to cut and tie the saphena above the knee In this way one will often find the perivenous edema high above the wound and cut its further course short The scar blocks future thrombotic or lymphangitic extensions In the subfascial phlegmons one should make long incisions along all the veins that are surrounded by pus, often half a dozen from the ankle to the knee They heal kindly as the edema recedes, if strips of sound skin are left between them

I have not been able to muster courage to do primary amputations and have lost surely one, perhaps two, men by waiting until the limb was evidently gangrenous When amputating I have merely cut through the soft parts below the site of fracture leaving long flaps of skin and muscle and have not attempted to amputate in healthy tissue Part of the flaps slough away, but enough usually remains to make a useful covering for the stump It has not been necessary to amputate for phlegmons limited to the soft parts without fracture The most virulent phlegmons are those of the lower extremity, those of the arm are as a rule less dangerous One hears much talk among the men of "poisoned" ammunition, this is evidently a myth, the fact that the leg and the foot are most severely affected while severe phlegmons of the arm are rare, makes it plain that it is the dirt and dirty clothing accompanying the fragment of shell that produce the infection rather than the fragment itself The coat of course is rarely as dirty as the trousers and drawers

The after-care of phlegmons is one of the most difficult problems we have to meet It is impossible to say when the infection is conquered For months after the wounds are clean the men will suddenly have fever of obscure origin, develop erysipelas or have recurrences of septic inflammation Any attempt at complicated plastics, any attempt at clean amputations with closure of the wound is followed by high septic fever, is a most risky thing, and is doomed to suppuration and failure, even long after the wounds are clean and the temperatures normal One is desperate, the wounds must be brought to a close at some time, one does not know when When reamputating it is best to disturb the granulations as little as possible, to make a simple straight longitudinal incision, cut off a sufficient length of protruding bone, and let the wound close by granulation, bringing the edges together considerably later with adhesive plaster, not with sutures

In some cases where one does not have to cut or otherwise disturb the granulating wound, the stumps may be covered by simple plastics, sliding down a bridge flap from the same extremity, or taking a pedicled flap from the other leg, or, in the case of the arm, from the chest Bearing future difficulties in mind, one should try to save flaps long enough to cover the bone at the first operation — flaps long enough to accomplish closure after they have shrunk and are cleanly granulating and can be laid over the stump

The late recurrences of fever and suppuration that we find occurring spontaneously or after the simplest operative intervention, are due, I think, to streptococci which have accompanied the gas bacillus in all of my cases, and not to the gas bacillus itself The sepsis is a streptococcic sepsis in its clinical aspects I have not been able to make blood cultures, but one case that showed thick gram-positive bacilli with central spores August 25, showed after death September 8, streptococci and staphylococci but no gas bacilli in cultures from the wounds, regional lymph glands and spleen

PROVISION FOR THE CRIPPLED

September 5 the Ettlingen Hospital was converted into a purely orthopedic institution and run in connection with a school for the one-armed, and an institute for the care and training of cripples As the war goes on the number of orthopedic cases and cripples multiplies Other wounded are cured or die, orthopedic cases and cripples remain There are numerous hospitals for their care throughout Germany—models of wisdom and foresight in coping with the economic problems that will come after the war

When it is apparent that a man is permanently incapacitated, he is transferred to his home hospital in order that he may get in touch with former employers and friends and look about for suitable work while undergoing hospital treatment Manual training schools with special courses for cripples, and all kinds of educational opportunities are open to him, and wherever possible the endeavor is made, not to find him another occupation, but so to educate him in his former trade and elaborate his former stock of knowledge that he will be able to do with his brains what he previously had to do with his hands Thus one-armed bricklayers and masons have been taught mechanical drawing and architecture and are earning more money with their one arm as builders and contractors and foremen than they did before the war with their two hands This, of course, is not given to every man's talents and industry, but every conceivable contrivance and prosthetic appliance and tool are given the crippled so that they may earn a useful livelihood in spite of their disablement The neurologic-orthopedic hospital in Mannheim, to which Stoffel is surgeon, is a model While undergoing treatment and in the free intervals between orthopedic exercises, massage, etc, the men attend classes in bookkeeping, stenography and other commercial studies, in cobbling, locksmithing and all sorts of trades, in bookbinding and other industrial arts

Much depends on willingness to work, the certainty of a pension is a drawback in this respect, and I think it quite likely that some law may be found necessary after the war to keep cripples from idleness There is much here that bears on our own compensation laws and that would be worth investigation

Karlsruhe Sept 22 1915

Benefits of Applied Physiology—The gains in human vitality which we can secure from applied physiology will I believe prove as surprising as those we are already securing from applied bacteriology To this end we need to formulate scientifically what constitutes a wholesome life and to educate the people on what changes from existing customs are necessary to live that life Furthermore, in the industrial world we must in some cases compel wholesome mental and physical conditions for our working people The time has come when science must subdue custom and reason triumph over tradition—Prof Irving Fisher in *American Journal of Public Health*

TOTAL REMOVAL OF THE ORBIT UNDER LOCAL ANESTHESIA

HERBERT P COLE, MD
Fellow of the American College of Surgeons
MOBILE, ALA

Having occasion to perform total removal of the orbit in a nephritic woman 81 years old for a recurring suspected melanotic sarcoma I determined on the use of local anesthesia, feeling that the prognosis did not warrant any serious operative risk Much to my surprise the literature failed to disclose even a case report of this operation performed under local anesthesia injection, although the literature is replete with local anesthesia methods for tenotomy and operations on the bulbus oculi There are also frequent references to various methods for deep orbital blocking of the trigeminal nerve

The remarkable facility with which I performed complete removal under local anesthesia without pain or risk to the patient urges me to present what I believe to be an original technic I wish also to present my avulsion of the supra-orbital and infra-orbital nerves and the contents of the infra-orbital canal and the supra-orbital notch as an original addition to the usual operation

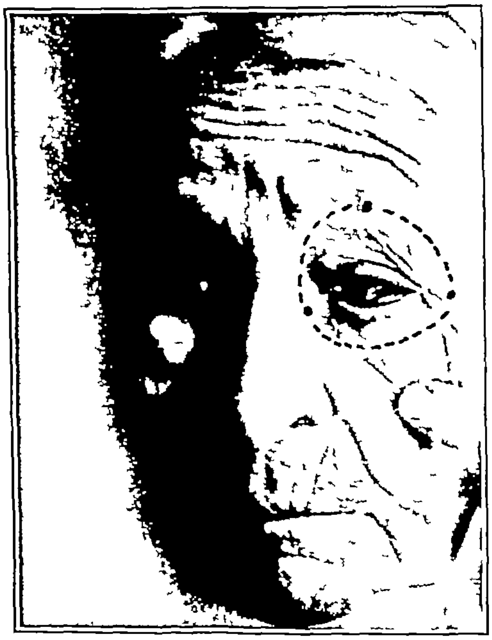


Fig 1—Removal of orbit for melanotic sarcoma Note growth on lower lid Dots mark points of deep nerve blocking Dotted line marks superficial infiltration The dot at the outer angle of the orbit is placed about 2 cm too far outward

REPORT OF CASE

Feb 1, 1915 The patient a white woman, aged 81, referred by Dr Blewett of Citronelle Ala, gave a history of having had a slow growing fungus-like tumor removed seventeen months before It slowly recurred and was again removed in seven months It reappeared two months ago and appeared as a slightly nodular, darkly pigmented growth bulging under the conjunctival margin of the lower lid. The growth was fixed to the conjunctiva and the skin margin and was approximately 1 cm in its long diameter and was not attached to the bony orbit nor the bulbus oculi

An examination of the fundus disclosed no pigmented growth or other abnormality A tentative diagnosis of melanotic sarcoma prompted a search for metastatic growths revealing a small patch of verruca senilis on either cheek, a small red papilloma above the right nipple and one near the seventh cervical vertebra A small area of verruca senilis had been removed from the left cheek five months before Otherwise there was nothing even slightly suggestive of a malignant growth Albumin and casts were found in the urine but no melanogen

Operation—A preliminary injection of scopolamin $^1/_{200}$ grain and morphin $^1/_8$ grain was given seventy-five minutes before operation, and scopolamin $^1/_{200}$ grain and morphin $^1/_6$ grain hypodermically, thirty minutes before operation A line of local anesthesia infiltration was made one-half inch below the lower palpebral margin and carried well down on the malar border The infiltration was then carried within the orbit and close to the orbital floor This permitted dissection along the orbital floor where I determined the growth was free from the periosteum.

A heavy needle 5 cm in length was then passed into the deep orbit following the median bony wall well up toward the orbital apex, the tissues being slowly infiltrated with a 1 per cent novocain-epinephrin solution along the course of the needle In this manner the frontal and lacrimal nerves were blocked, with a periosteal infiltration up to the optic foramen, about 5 c c of solution being used (after Braun)

Similarly a needle was passed along the lower orbital margin well in toward the foramen rotundum In this manner I accomplished a perineural infiltration of the infra-orbital nerve and its branches in the sphenomaxillary fissure, using about 3 c c of a 1 per cent solution (Fig 1)

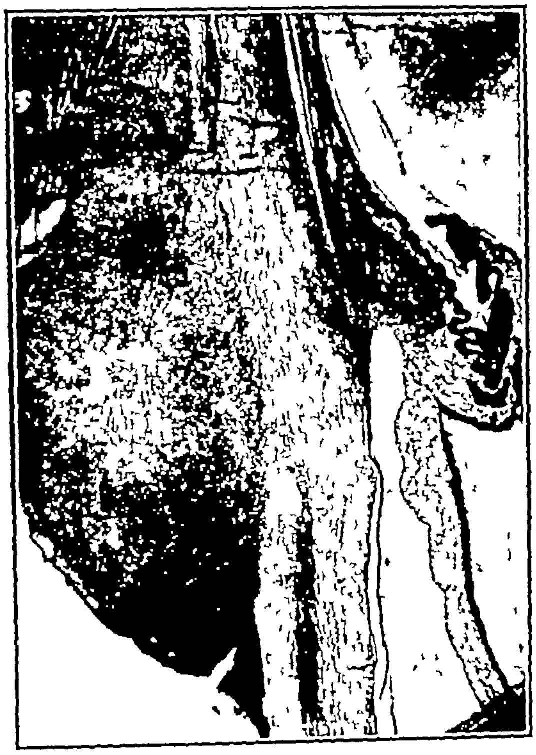


Fig 2—Melanotic sarcoma apparently arising in the conjunctiva

The third needle was passed into the orbit a little to the outside of the supra-orbital notch, following the bony wall well up toward the apex and producing a perineural infiltration of the supra-orbital nerve The superficial line of skin infiltration was then completed with a 0 5 per cent. solution encircling the external orbital margins The entire orbital contents together with the periosteum were then removed after the usual method

In addition I employed an original procedure, so far as I am able to ascertain, by avulsing the supra-orbital and infra-orbital nerves and cleaning out the fatty tissue and periosteum from the supra-orbital notch and the infra-orbital canal, thereby removing a possible source of neoplastic recurrence. The entire operation was performed with the patient conscious and without pain or discomfort She returned to the ward with a pulse of 80

Postoperative History—There was no recollection of the operative period The patient suffered practically no postoperative pain due to the avulsion of the supra-orbital and infra-orbital nerves An area of anesthesia presented over the distribution of the nerves She was at once placed on a regular ward diet, was allowed to be up and about and was sent home in five days, healing occurring by granulation

On Aug 23, 1915, the patient returned for examination in apparent good health with a clean and healed orbit There was a melanotic nodule beneath the skin in front of the left ear and a second nodule below the left clavicle The latter was removed under local anesthesia and on dissection presented the picture of a typical metastatic melanotic sarcoma The urine at this and for the first time disclosed the presence of melanogen, indicating the probability of hepatic invasion

Pathologic Report (By John A Lanford, M D)—The specimen consists of the orbital contents together with the entire lower eyelid and the major portion of the upper lid A slightly nodular pigmented and semisolid growth 1 by 0 5 cm by 0 5 cm in diameter lies in the conjunctiva of the lower lid and does not involve the eyeball or other structures On section it presents a smooth, firm, deeply pigmented surface Microscopic section discloses a melanotic sarcoma apparently rising from the conjunctiva

CONCLUSION

The facility with which removal was performed without pain or risk to this patient bearing such an unfavorable prognosis warrants its further application under similar or more favorable circumstances The early return of metastasis in this case substantiated our selecting a safe operative procedure

Van Antwerp Building

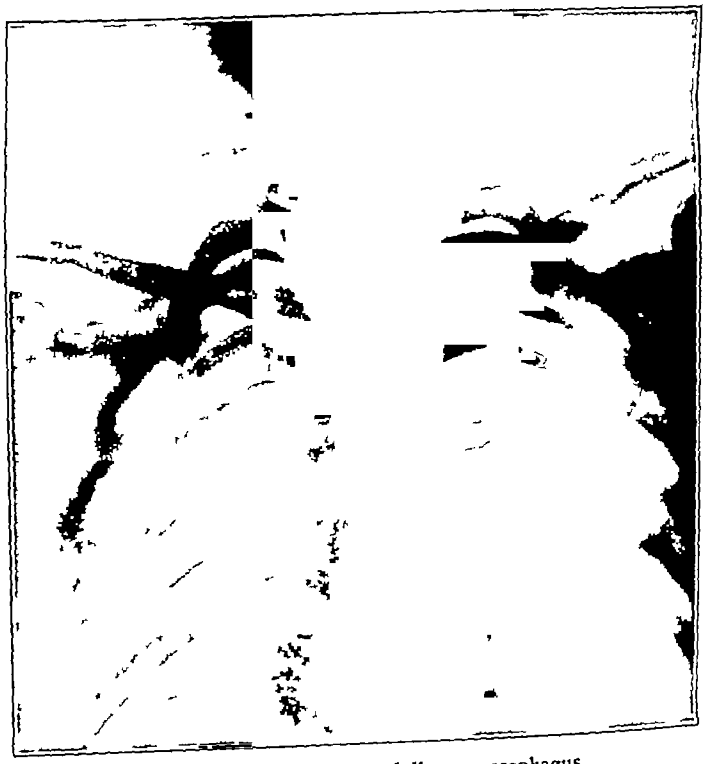
REMOVAL OF HALF-DOLLAR AND QUARTER-DOLLAR FROM ESOPHAGUS OF CHILD

H B Decherd, A M, M D, and W D Jones, M D
Dallas, Texas

Paul D, white, aged 8 years and 2 months, of Pittsburg, Texas, June 22, 1915, had a half-dollar and a quarter-dollar in his mouth, and "skinned the cat" on a horizontal iron bar Both coins were suddenly swallowed His physician gave him salts and castor oil several times during the next few days, as well as olive oil enemas He vomited quite often for two days, he could swallow no solids—only water, soups and milk, and these not in large quantities June 28, the boy was brought to us at Dallas, and the coins located as shown in the accompanying roentgenogram Note that the quarter shows slightly below the half-dollar

Under anesthesia (ether), and with the fluoroscope over the chest-wall, the coins were easily and quickly removed without the least traumatism The half-dollar was first removed, it being more easily grasped by the forceps Both coins were somewhat rusted and caked with food

Our experience in removing a tack from the left bronchus of a 4-year-old child some months ago together with this case, demonstrates the great ease of work of this character when done with the aid of the fluoroscope on the chest-wall Every minute movement of both forceps and foreign body can be observed with the greatest accuracy, and extraction performed in the same way Even the tyro has nothing to fear if he has a good Roentgen-ray man to depend on There were no complications, the child returning to his home next morning after eating a hearty breakfast


Half dollar and quarter dollar in esophagus

Therapeutics

THE ALCOHOL HABIT

According to the Towns-Lambert treatment, patients who have been taking both morphin and alcohol should be treated for the morphin as previously described, and at the same time the alcohol should be gradually withdrawn Such patients are likely to have a great deal of stomach disturbance and may not well retain their medication or food Lambert thinks that sodium citrate in doses of from 5 to 10 grains, every hour, best relieves this condition, with or without from 10 to 20 grains of cerium oxalate or 5 grains of Tully's powder [compound powder of morphin], every two hours for one or two doses

Sodium citrate should be given in solution Cerium oxalate is a drug that cannot compare in value with bismuth subcarbonate The compound powder of morphin treatment, of course, should not be used in patients who have both the alcohol and morphin habit

Lambert describes in detail the treatment of the alcohol habit about as follows The belladonna mixture described under morphinism and the five compound cathartic pills and 5 grains of blue mass are given together at the first dose, then the belladonna mixture is continued every hour, day and night Twelve hours after the initial dose of drugs, the patient is again given from three to five compound cathartic pills, and twenty-four hours after the initial dose he is again given the cathartics, followed by salines if necessary, and again the cathartics and salines are given at the thirty-sixth hour Some hours after the last dose the bilious stool should appear Sometimes, Lambert says, it is necessary to carry on the treatment over one or two more cathartic periods with compound cathartic pills and blue mass, at intervals of forty-eight hours

Elderly or nervous patients, especially if they have been on a long debauch, "are tapered off with 2 ounces of whisky for four or five doses through the first twenty-four hours " Also, if these patients are excessively nervous and cannot sleep, a mixture of "chloral hydrate 20 grains, morphin one-eighth grain, tincture hyoscyamus one-half dram, tincture of ginger 10 minims, tincture capsicum 5 minims, and water one-half ounce," which he thinks is "the best hypnotic for them " After the twenty-four hours, or sooner, if the circulation requires it, these patients should receive strychnin and digitalis

If the patient has the cocain and alcohol habit combined, as in the treatment of the cocain habit alone, no cocain is given at all but strychnin must be given from the beginning

This seems like pretty serious medication Although the value of free catharsis is recognized, some less complicated cathartic drugs and preparations will doubtless act as well In weak and elderly patients, as emphasized by Lambert, support of the heart will be urgently needed, and in patients who have not the combined morphin and alcohol habit, but only the alcohol habit, morphin is often good treatment to quiet excessive cerebral excitation It is much better to combine the morphin hypodermic treatment with a hypodermic dose of ergot The ergot should be given intramuscularly, best into the deltoid muscle, an hour before the morphin is administered The ergot will strengthen the heart, raise the blood pressure, act as a mild sedative to the central nervous system, and accentuate the quieting effect and the soporific effect of the morphin that is given an hour following Hence the dose of morphin need not be so large as it otherwise must be, as any individual with cerebral excitation may be irritated and not quieted by a small dose of morphin

As stated by Lambert, many of these alcoholic patients have gastritis, and any such combination as the hypnotic mixture above described is likely to be immediately vomited The use of ginger and capsicum is the old method of causing an irritation of the stomach not unlike that of clear whisky These spices have been given for years to prevent the stomach craving for its usual alcohol dose Therefore there is nothing new in this part of the treatment The small dose of tincture of hyoscyamus can play a very small part in the quieting action of the hypnotic mixture described If atropin is advisable, or scopolamin is needed, it had much better be given hypodermically to get the desired effect

Chloral hydrate is a most valuable hypnotic, and, if the heart is not too weak and the stomach will retain it it should be the hypnotic of choice But it is urged that it should not be combined in the same prescription with the ingredients suggested The absorption of the dose of morphin may be greatly delayed when so combined Very active drugs, in serious conditions such as the prostration from the treatment of chronic alcoholism or of delirium tremens, should be given hypodermically, as they not only may be vomited, but they may not be absorbed and may remain in the stomach for hours

It would seem that the Sceleth treatment of morphinism, modified to fit the alcoholic patient, would be much simpler than the Towns-Lambert treatment The cathartic treatment is not so severe, and the drugs used are much more simple, and the prostration cannot be so great

DELIRIUM TREMENS

This condition so frequently occurs, and the symptoms and treatment are so well understood, that it is only necessary to refer to some of the newer discoveries in regard to conditions present in this alcoholic condition of the brain

Hirsch[1] finds a profound disturbance of the suprarenal glands in those dying from alcoholic poisoning Kaiserling and Orgler in 1902, were the first to note the presence of liquid crystals or droplets in the cortex of the human suprarenal glands Hirsch says that nearly all investigators agree that these doubly refractive droplets are esters of cholesterol or lipoids Somewhat similarly refractile globules have been found in the liver when there is fat or cloudy swelling, and in diseased softened parts of the central nervous system in certain conditions

Hirsch states that Dr E R Le Count of Chicago has constantly found alterations in the cortex of the suprarenals in individuals dying of delirium tremens The most important changes are the diminution of the yellow color of the cortex and the presence of doubly refractive droplets It has also been chemically determined that the cholesterol content of the suprarenals is diminished in delirium tremens In fact, it may also be stated from these postmortem findings that if these changes are not found in the suprarenals, the patient died of some other cause than delirium tremens, and Hirsch found that in chronic alcoholics without delirium tremens these refractive lipoid droplets were not increased in number, but were even diminished, showing that the suprarenals were subjected to some other kind of toxin Acute toxic processes have been shown to diminish the refractive bodies of the suprarenals

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[1] Hirsch E F A Morphologic and Chemical Study of the Double Refractive Fats of the Adrenals in Delirium Tremens The Journal A. M A Dec. 19 1914 p 2186

Hirsch quotes Landau as stating that the suprarenals "are not concerned with lipoid formation, but rather the adrenal cortex contains an increased lipoid content under different conditions which have in common only a retention of the lipoids, or are characterized by an abnormally increased lipoid formation, the opposite holding true in conditions accompanied by a lipoid-poor cortex "

It would seem that when the heart is weak and the blood pressure low, as it generally is in delirium tremens, whatever other treatment was used, epinephrin would be of value

This disturbance of these suprarenal glands may account for the development of the "between toxin" mentioned by Steinebach [2]

Steinebach has found that when the pupils in delirium tremens do not react to light, the pressure of the cerebrospinal fluid has been increased, as shown by spinal puncture, and after some of the fluid in the cerebrospinal canal has been allowed to drain away, the patient may drop to sleep without any drug Steinebach has used lumbar puncture in eighteen cases of delirium tremens, and his results have confirmed his belief that abnormally high cerebrospinal pressure is responsible for some of the symptoms of delirium tremens Although alcohol has been found in the cerebrospinal fluid in alcoholic poisoning cases, Steinebach thinks that it is not the alcohol that irritates the meninges to cause an increased secretion of fluid, but that probably the alcohol generates a sort of toxin (which he terms "between toxin"), which can cause an increased production of cerebrospinal fluid He therefore thinks that spinal puncture not only will relieve pressure, but also will remove some of this irritant toxin and aid in saving the patient

Though alcoholic cerebral edema is probably due to a toxin acting on the vessels of the meninges, we must not forget that serous meningitis due to an infection may occur in an alcoholic patient

Alcoholic wet brain is discussed by Sceleth and Beifeld [3] These observers see annually about 2,500 cases of alcoholism, consequently, their ability to give important data concerning delirium tremens is unquestioned They state that the longer the history of alcoholism, the more frequent will be the attacks of delirium tremens, and the more likely is the patient to develop wet brain, and the greater the number of attacks, the more likely does cerebral edema follow the delirium It never precedes it In other words, alcoholic wet brain is a late symptom of delirium tremens and part of the toxic effect of alcoholic poisoning They also find that a long period of overuse of alcohol must precede the condition of real delirium tremens, namely, from seven to ten years, which may be termed the "incubation period" It has long been recognized that chronic alcoholic patients have so long maltreated their stomachs, intestines and livers, to say nothing of their kidneys, that they are unable properly to destroy toxins, perhaps quite largely from the injury done the "Pasteur filter" of our bodies, namely, the liver

Added to the disturbed metabolism caused by sclerosis, or chronic inflammation, of the glands is the inability of the organism to care properly for waste products, to detoxicate them, so to speak Also the delirium tremens patient so frequently has gastritis, with vomiting, during his attack, that starvation adds its element to the production of an acidosis, and acidosis plays quite an active part in his serious condition, and may cause his death

Sceleth and Beifeld find that an acute infection like pneumonia, and a serious injury like the fracture of a bone, and even a mental shock, is very frequently the predisposing cause of delirium tremens

Delirium tremens may occur in several degrees of intensity There may be the simple "touch of the horrors," which means the patient is much nervously excited, disturbed by the least noise, and may have hallucinations, more or less, of sight and hearing, as well as sleeplessness He is also pretty sure to have tremor These investigators find the incipient period of a severe attack to be about two or three days, during which period proper treatment and good sleep may forestall the actual development of the condition of delirium tremens As is well known, delirium tremens may be accompanied by subnormal temperature, cold skin and general prostration, or, in a strong individual not seriously diseased, there may be some fever, flushed face, and increased blood pressure, with a strongly acting heart It is obvious that these two types of delirium tremens require very different treatment The first type must be supported, the second type may be depleted Both, Sceleth and Beifeld find, require strychnin in place of their alcohol

The average length of time that delirium lasts is about five days It may terminate sooner, it quite frequently lasts longer These observers find that the comatose or wet brain symptoms will occur in from 10 to 15 per cent of the cases If cerebral edema is to occur, the patient's delirium becomes of the low, muttering type, he may have a slight rise in temperature, and the pulse becomes more rapid and weak, the tongue becomes coated, the breath foul, the teeth covered with sordes, and albumin often appears in the urine In other words, the cerebral irritation has become one of cerebral pressure With this pressure Sceleth and Beifeld say that vomiting does not occur Kernig's sign is always more or less present, and when there is much rigidity of the muscles, especially of the back of the neck, the prognosis is bad The deep reflexes are at first increased during the cerebral irritation period, and later, with wet brain symptoms, are first sluggish and then may be absent "The pupils are usually small, equal, regular, responding sluggishly to light, they dilate somewhat if the patient can be aroused, narrowing down once more as he relapses into coma "

Contrary to the observations of Dana and of Steinebach just quoted, Sceleth and Beifeld do not find the cerebrospinal fluid under much pressure In an uncomplicated case of alcoholic wet brain there is no special abnormality in the cerebrospinal fluid

In numerous necropsies performed by Dr E R Le Count on patients who have died of delirium tremens, he has not found signs that the fluid in the meninges and ventricles of the brain was under increased pressure before death

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[2] Steinebach, R Deutsch med Wchnschr, 1915, xli, No 13, abstr, The Journal A M A, May 8 1915 p 1620

[3] Sceleth, C E, and Beifeld, A F Am Jour Med Sc, 1915, cxlix, 881

In making a diagnosis of a patient who is brought to the hospital comatose, Sceleth and Beifeld urge that trauma should not always be looked on too seriously The history of an injury may cause the alcoholic condition to be overlooked On the other hand, a fracture at the base of the skull, when no serious external injuries are in evidence, may be diagnosed by bleeding from the ears or nostrils, by finding cerebrospinal fluid exuding from these regions, by slowly developing ecchymoses over the mastoids or about the eyes, by paralysis of the muscles of one or more extremities, and by spinal puncture showing blood in the cerebrospinal fluid

An acute meningitis with sudden coma may be diagnosed by the appearance of the fluid in cerebrospinal puncture, and by its bacteriologic examination Uremic coma is difficult to separate from the wet brain of alcoholism In uremia, convulsions are likely to occur, and there may be exaggerated knee jerks, while the deep reflexes are generally absent in coma of wet brain Apoplexy, cerebral embolism, and cerebral thrombosis generally give localized paretic symptoms

The wet brain of alcoholism lasts, on an average, about three weeks, and there may be symptoms of this condition for many more weeks, but the mortality, according to Sceleth and Beifeld, is nearly 75 per cent Death is generally hastened in these cases by a coincident, or later developing, bronchial pneumonia Cardiac failure, and denutrition from inability of the patient to take nourishment, are serious factors in the downward tendency of alcoholic wet brain

In the treatment of this condition, every effort should be made to get some nourishing liquid into the patient, even if it is necessary to pass a nasal tube or give rectal feeding, though such methods are not very satisfactory The bowels should be moved as often as seems advisable Cardiac tonics are certainly in order Sceleth and Beifeld have not found spinal puncture of value, contrary to the findings of Dana and Steinebach, quoted above While they find that ergot is of value in the sthenic type of delirium tremens, they have found it harmful in alcoholic wet brain This malaction of ergot is difficult to understand, provided that indications for ergot are present, namely, if the blood pressure is low and the heart not too weak, and with more or less paralysis of the intestines, with possibly distention with gas, and with low fever it would seem that ergot would be indicated If the heart is so weak as not to withstand the increased peripheral resistance caused by ergot, and if the blood pressure is not low, ergot would not be indicated Ergot, to be of value in such conditions, must be given intramuscularly, and not too frequently

Neurasthenia and the War—A fact of importance which we may mention is that neurasthenia and other neurotic conditions are apparently becoming much less common in spite of the anxiety and strain resulting from the war This is not difficult to understand, as the experience of most people who have been accustomed to the treatment of nervous conditions indicates that it is not so much the great tragedies of life which are apt to upset the equilibrium of the nervous system but small daily worries persisting for long periods of time and above all lack of occupation and interest in life—Dr W H B Aikens address before Toronto Academy of Medicine

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES"

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION BUT THAT SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL

W A PUCKNER, SECRETARY

EURESOL (See N N R 1915 p 268)—The following dosage form has been accepted

Euresol pro Capillis—Euresol perfumed to render it suitable for scalp lotions Manufactured by Knoll and Co Ludwigshafen a Rh, Germany and New York (Merck and Co New York)

POLLEN EXTRACT—Pollen Vaccine—A solution of pollen protein

Actions and Uses—Pollen extract is employed for the relief or prophylaxis of a common type of hay fever or pollinosis Pollen extract prepared from the pollen of one plant (for instance, ragweed) is not primarily intended for use in cases due to pollen from other plants as grasses and goldenrod though persons subject to autumn catarrh frequently react to the pollen of more than one species The patient's susceptibility may be tested by rubbing a small quantity of the pollen vaccine into a scratch of the skin, if the patient is sensitive to that particular pollen, an urticarial wheal results To avoid systemic disturbance, it is recommended that no therapeutic injections be made until the reaction from this cutaneous test has subsided completely Treatment with pollen extract has seemed to give a varying degree of relief in a number of cases In some cases the psychic element seems to play a part and in such instances it is difficult to determine to what degree the good results are due to suggestion The immunity from symptoms conferred by treatment is apparently not permanent, and in most cases does not last longer than a year

Dosage—It is regarded as important that the individual dosage should be determined by testing each patient's susceptibility, as sensitiveness varies greatly and an overdose may cause disagreeable and alarming symptoms or possibly even death A method used for such test is to make a series of scratches on the patient's skin (it is important that these should be made at some distance from the scratches of the first test) and to apply to these scratches 25 per cent, 10 per cent., 1 per cent or even weaker dilutions of the vaccine From 5 to 10 drops of the dilution which fails to produce a definite skin reaction may be injected subcutaneously as the first dose Injections, increasing by a few drops at first, and later by the use of a stronger dilution, may then be given at intervals of a few days or a week

H K. Mulford Company Philadelphia

Hay Fever Vaccine Mulford (Autumnal)—Prepared by extracting the proteins from the pollen of ragweed (*Ambrosia artemisiaefolia*) and standardizing the solution by estimating the amount of protein contained in it Preserved with trikresol Marketed in packages of four syringes containing respectively 0 0025 mg 0 005 mg 0 01 mg and 0 02 mg of pollen protein also in separate syringe packages containing 0 02 mg of pollen protein

The pollen after being dried is ground in a ball mill to destroy the cell membrane It is then extracted with physiologic salt solution This extract is precipitated with acetone the precipitate is dried and finally extracted again with physiologic salt solution The soluble proteins being brought into solution a nitrogen determination is made of this extract, and it is then standardized according to (nitrogen) protein content

MERCURIC SUCCINIMIDE (See N N R 1915 p 201)—The following non-proprietary preparation has been accepted

Mercury Succinimide Merck—Manufactured by E Merck, Darmstadt Germany (Merck and Co New York)

MORPHINE MECONATE (See N N R., 1915 p 209)—The following non-proprietary preparation has been accepted

Morphine Meconat Merck—Manufactured by E. Merck Darmstadt Germany (Merck and Co New York)

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SATURDAY, DECEMBER 4, 1915

THE PRICE OF QUININ

We in this country are inclined to feel that the scarcity of certain drugs is a local hardship As a matter of fact, as indicated in articles abstracted recently,[1] the war has produced a stringency in the drug market everywhere Among the drugs now expensive and difficult to obtain is quinin, the exportation of which from Germany has been forbidden for several months, and on which an embargo was lately imposed by Great Britain When the British embargo was declared no German, Dutch or Javanese quinin salts had been obtainable on the New York market for some time American manufacturers were reported to have withdrawn from the market and to be holding their dwindling stocks and inadequate output to fill previous contracts Such contracts were being filled at 50 cents an ounce for hundred-ounce tins, but consumers obliged to purchase on the open market, at last accounts, were paying middlemen from $1 25 to $1 50 an ounce for quinin sulphate, while a little earlier prices of $2 10 and $2 25 were quoted

Only once or twice since the Civil War (when $6 50 an ounce was paid in some instances—in depreciated currency to be sure) have these prices been equaled or exceeded Between 1880 and 1884 there was a period of high prices, which stimulated an attempt to corner the supply of cinchona bark[2] The breaking of this corner and the consequent dumping on the market of accumulated supplies, the increased cultivation of the plant and the increased alkaloid content of the bark produced by cultivation are held responsible in varying degree for the subsequent downward tendency of prices Ten years ago the price quoted by domestic manufacturers was 24 cents an ounce in hundred-ounce tins From 1910 to 1912, inclusive, it was 19 cents, but in January, 1913, and January, 1914, it was 25 and 30 cents, respectively[3]

It is perhaps worth while to glance at the world situation with respect to quinin, in an effort to discover if any other factors beside the war are helping to produce the present high prices Many of the market conditions are obscure, but the following appear to be the leading facts Cinchona bark is produced in Java, India and Ceylon, only a comparatively small amount still comes from South America, and some is grown in Africa, Jamaica and a few other countries[4] According to Kraemer,[5] about 80 per cent of the bark of commerce is produced in Java One of the leading countries in the manufacture of quinin is Germany, and other manufacturing countries include France, Great Britain, Holland, Italy, the United States, Java and India[6] Not all of these countries manufacture quinin in an amount sufficiently exceeding domestic needs to affect the foreign market Thus, India, a large producer of cinchona, is said to use virtually her whole crop of bark, and also to require some Javanese bark for the domestic manufacture of quinin, which alkaloid is all or practically all consumed within the country[7] The world's market depends for cinchona bark chiefly on Java, and for quinin mainly on Germany[6] The United States is Germany's largest customer, besides being the heaviest consumer of quinin among all the countries of the world[8] The effect of any disturbance in the world's supply of quinin would therefore be felt most acutely here The war, of course, has affected the supply by causing an increased demand for quinin for the use of the armies, by interfering with the free movement in commerce of the bark and the manufactured alkaloid and salts, and in other ways, both direct and indirect

Certain other elements, however, enter into the situation, and some of these antedate the war The shipments of bark from Java had been gradually rising, until in 1910 they reached a total of nearly 8,000,000 kg[8] In July, 1913, it is understood that the planters formed an agreement to maintain prices by restricting the output This agreement (to which European manufacturers are believed to be parties) has since been maintained with modifications necessitated by the war, and the downward trend of exports is indicated by the fact that the total shipments of bark from Java to Europe for the first nine months this year reached only 3,776,810 kg, as against 5,531,500 and 6,686,450 kg for the same periods of 1914 and 1913, respectively[9] The price quotations from American and British quinin manufacturers given above showed a rising tendency even before the time of this agreement A fire which damaged a portion of the Javanese bark fields early this year probably did not affect the situation seriously [10] A somewhat significant straw in the wind, possibly, is the report that the quinin factory at Bandoeng, Java, has declared a dividend of 28 5 per cent for last year, as against 17 5 per cent for the previous year [9]

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[1] Miscellany, The Journal A M A, Nov 20, 1915, p 1840

[2] National Standard Dispensatory, 1909, Article Cinchona, p 447

[3] A table of prices for quinin sulphate from 1890 to 1915 (Chem and Drug) shows a similar movement of prices in Great Britain namely, from 1 shilling 5 pence to 1 shilling, 1890 to 1905, 8½ pence 1909 to 1911, inclusive, and 9½ pence, 1 shilling and 1 shilling 3½ pence for 1912, 1913 and 1914, respectively

[4] King's American Dispensatory, 1905, Article Cinchona, p 538

[5] Kraemer, Henry Scientific and Applied Pharmacognosy, 1915 p 738

[6] Information supplied by the Bureau of Foreign and Domestic Commerce U S Department of Commerce

[7] Roeder, George Tropenpflanzen, 1909, xiii, 473, quoted in Digest of Comments on the Pharmacopeia

[8] Tunman O Ap Ztg, 1910 p 565 also information from the Bureau of Foreign and Domestic Commerce.

[9] Oil, Paint and Drug Reporter, Oct 25, 1915, p 45

While some of the factors in the situation were operative previously, it would seem that the recent abrupt rise in the price of quinin is due chiefly to causes connected with the war The present extremely high prices, therefore, may be temporary Moreover, there is said to be a probability of increased output from the Amsterdam factories [11]

RECTAL FEEDING REINVESTIGATED

The limitations of rectal feeding as a mode of introducing true nutriment into the organism, in the sense of furnishing calories of protein, fat and carbohydrate, have frequently been pointed out in The Journal The practice of injecting nutrient enemas into the lower bowel has largely been given up, at least in the manner in which the procedure was carried out a generation ago Nevertheless there are practitioners who continue to assume that a poorly digested mixture of milk and other partly soluble food products can experience some absorption and utilization from the colonic regions into which they are introduced, especially if the administration is slow, as is necessitated by the drop method of introduction employed by Murphy for saline solution

The essential difficulty in the conventional plan of rectal feeding lies in the fact that practically all foodstuffs need to be digested very completely before they can be utilized from the alimentary tract The lower bowel contains no satisfactory ferment equipment for accomplishing the essential digestive changes Therefore, unless special and specific precautions are taken to furnish all of the nutrients in a completely digested form they are, theoretically at least, of little avail for rectal alimentation In practice it is almost impossible, or at any rate impracticable, to obtain any of various foodstuffs, with the possible exception of sugar, in a suitable condition of digestion Water and salts are, of course, readily absorbed from an enema, and because of the relief to a patient who has been unable to retain ingesta of any sort administered by way of the mouth, an apparent benefit is ascribed to the nutrients dissolved in the introduced fluid The disappearance of water from the latter does not assure the absorption of the food therein as well

How futile the rectal feeding of peptonized milk may be, even when it can be continued for days without discomfort (which is rarely the case), has been shown in actual metabolism experiments by Adler[12] of the University of Maryland In order to ascertain the extent of absorption of food administered by this method, the colonic intakes of nitrogen for from four to six days were compared with the output in the urine and the return loss by rectum Patients with gastric and duodenal ulcers, but without abnormality of nutrition, were employed as subjects The largest amount of nitrogen that Adler was able to supply daily by rectal feeding was 3 9 gm, of which 2 gm were returned with the stools In no case was there a disappearance of more than 50 per cent of the protein supplied, in some cases the apparent absorption was as low as 30 per cent The average amount of nitrogen absorbed in these cases was 1 14 gm per day, equivalent to 7 1 gm of protein

From a practical standpoint and in consideration of the usual duration of such attempts at rectal feeding of protein, the results are practically negligible Adler remarks that when the amount of nitrogen actually lost by the individuals is compared with the amount that it is possible for them to absorb by colonic feeding, one must realize how little is accomplished It should be noted, however, that the human organism can experience very considerable losses of protein without permanent damage Starvation experiences extending over several weeks testify to this It would seem more rational, therefore, if rectal feeding is to be attempted at all, to concentrate the effort on that type of foodstuff which is most likely to be absorbed and promptly utilized Glucose belongs in this category

THE SOURCE OF ENDOGENOUS URIC ACID

The successive changes in the conceptions held by scientific men regarding the sources and formation of the uric acid excreted in the urine are indicative of a steady progress in our knowledge Not long ago, uric acid was still looked on as an intermediate stage in the metabolism of simple proteins—a step in their transformation to urea Modern knowledge of the chemistry of the purins turned a new light on the problem, and indicated the direct chemical relationship between nucleoproteins and their derivative purins on the one hand, and uric acid on the other The leukocyte hypothesis of Horbaczewski, postulating a direct relationship between the disintegrating nucleated colorless blood corpuscles and uric acid production, likewise had its vogue, until it was clearly demonstrated that leukocytosis and uric acid elimination are by no means necessary concomitants

Some years ago Burian furnished a helpful suggestion by pointing out that the excreted uric acid of man appears to have a twofold source One, the exogenous, is clearly related to the food supply, and is directly referable to the purin-yielding substances or free purins present in the diet Uric acid is the metabolic end-product of these compounds The unnary output of uric acid can, as is now generally appreciated, be markedly increased or diminished by the expedient of augmenting or decreasing the supply of purins in the ingesta The other, or endogenous, source of uric acid has not been so clearly ascertained It represents the origin of that small yet ever present fraction of the usual output which is realized even in the absence of all purin-yielding foods from the ration Evidently its origin is to be sought in tissue sources

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[10] Oil Paint and Drug Reporter Feb 1 1915 p 43
[11] Chem and Drug Nov 6 1915 p 49
[12] Adler Harry Value of Rectal Feeding Am. Jour Med Sc. 1915 cl 562

Hypotheses regarding the endogenous uric acid have not been wanting Its formation has been attributed to actual synthesis from simpler compounds It has been looked on as the end-result of the metabolism of the cellular nucleoproteins, representing the wear and tear of the nuclear materials of the organism This has, in fact, been a widely taught view, particularly at a period when the endogenous output of uric acid was believed to be a constant quantity for the individual

According to a view offered some time ago by Mares, the activity of the digestive glands is peculiarly concerned in the production of that fraction of the uric acid output not accounted for by ingested purins This theory, that endogenous uric acid may arise from glandular activity, has received some substantiation from recent experiments by Mendel and Stehle[1] at Yale University These show that materials free from uric acid precursors are not necessarily entirely devoid of influence on the uric acid output Conditions which tend to stimulate the alimentary secretory glands seem to augment the hourly output of uric acid while the provocative influences last Proteins, for example, which induce a more copious flow of digestive secretions than do fats or carbohydrates, tend to promote a larger output of endogenous uric acid than do latter foodstuffs in the course of their digestion Beside the effect of these food stimuli in bringing about an increased elimination of uric acid, a comparable one is produced by the administration of pilocarpin, which is known to stimulate the digestive glands Atropin, which inhibits secretory activity, was found to suppress the uric acid output normally noted to follow the ingestion of certain foods The passage of indigestible, bulky agar-agar through the digestive tract did not cause the effect which would be expected if the mere work of the intestinal musculature were a significant factor in endogenous uric acid production

If this view, supported by Mendel and Stehle, that a portion at least, of the endogenous uric acid may originate from the activity of the alimentary secretory apparatus proves tenable, several hitherto obscure facts can be explained It becomes evident why the output is lowered notably in starvation, when the alimentary tract is not functioning The often noted apparent constancy of the endogenous uric output (on purin-free dietaries) is then merely the expression of an unforeseen uniformity in the degree to which the digestive processes are involved by the diets in question On the other hand, a varying endogenous output no longer offers an unsolvable puzzle

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THE TRAGEDY OF UNPREPAREDNESS IN MEDICINE

A recent number of a periodical published in the interest of osteopaths contains a number of references to the death of a boy from diphtheria A death from any cause and even one from diphtheria would not usually have caused so much comment, but this boy happened to be the son of the editor, who is an osteopath The reports show that the disease was not recognized until a physician—a graduate of a Class C medical college—was called in, and he thought lobelia was better than antitoxin The editor is now mourning the death of his son, regrets that antitoxin was not used, and has started a campaign among osteopaths urging the use of antitoxin in diphtheria Pathetic as are the statements of this heart-broken father, they show unquestionably how slight was his knowledge of the simplest fundamentals of medicine They show also that the admission to practice of any one who is tied down to a theory, a cult or a fad, who has not previously been trained in the underlying medical sciences, is a menace to the public Some of the editor's statements follow (the words in brackets and the italics are ours)

> Billie had diphtheria four days before we knew what he had I had *never seen a case of diphtheria before, never even thought of looking at his throat* Dr ——— was called the fourth day and diagnosed the trouble at once He is an M D , has had wide experience has had the training so many of us have not had

Here is, indeed, a frank acknowledgment In another paragraph he says

> For many years I have been interested in diphtheria, have tried to figure out what I could do if my boys ever got it Talked with ——— [named two osteopaths] and many others *in re* antitoxin They usually *didn't believe in it* I suggested using it on Billie when Dr ——— [the M D referred to in the foregoing paragraph] was sure it was diphtheria He thought lobelia best

Unfortunately, the "graduates" of some low-grade medical colleges are deplorably lacking in their medical training The editor continues

> I don't understand antitoxin, I can't understand how a poison can cure disease or neutralize poisons Yet when the death rate is cut from 50 per cent to 10 per cent, isn't it best to be a physician first, an osteopath second?

And in another paragraph

> Billie depended on his father I in a way failed him While I lived up to the best light I had, still *my osteopath's training obscured my sense of fairness*, I think now I made a mistake. I did not give him the best care that his generation afforded

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[1] Mendel, L B and Stehle, R L The Role of the Digestive Glands in the Excretion of Uric Acid, Jour Biol Chem , 1915, xxii, 215

This periodical also prints an editorial reproduced from another osteopathic periodical which is likewise advocating the use of antitoxin in diphtheria. Extracts from this editorial show that other osteopaths are likewise seriously ignorant of the simplest facts of bacteriology, of infectious diseases and of the methods of preventing their spread. For example:

> Much ignorance regarding and much unreasoning opposition toward the administration of antitoxin for diphtheria still exist in our profession.

Again:

> Some who criticize antitoxin have never treated a case of diphtheria. Others have never seen [possibly never recognized] a case. Some admit freely they would refuse to treat diphtheria *if 'they knew what they were getting into.'* They explain that they 'do not cater to that kind of practice.' They do not like contagious diseases."

Another osteopath is quoted as saying:

> How many of us ever saw a case of diphtheria during our student days? Even if we used antitoxin how many of us would know how to use it? Personally, I believe in it but I regret to say, *I doubt if I would know a case of diphtheria if I saw it*, was not trained to know it.
>
> Two days ago I talked to a 1915 graduate who has never seen a case of measles, scarlet fever, diphtheria, erysipelas, typhoid fever or a single obstetrical case. He knew all about mumps as he had them himself during his senior year.

The paragraphs quoted show the fallacy of the belief, which appears to be prevalent in some states, that an individual may be safely permitted to practice a single branch of medicine, or make use of a single method of treatment, without first undergoing a complete course of instruction in the fundamentals of medicine. If the editor of the paper quoted, before specializing in osteopathic methods, had obtained a complete medical training, it would have enabled him not only to recognize diphtheria in its earlier stages and possibly prevent the death of his son, but also to understand why antitoxin has reduced the death rate in diphtheria "from 50 per cent. to 10 per cent." An important question — as far as the public is concerned — is: How many other children have lost their lives in his practice and in that of the thousands of others who have assumed the role of physicians, but who are unable to 'know a case of diphtheria if they saw it" or who cannot "understand" or do not "believe in" antitoxin? And diphtheria is only one of the many diseases, contagious or otherwise, which for their most favorable treatment require a positive and early diagnosis. While urging other osteopaths to make use of antitoxin in diphtheria, therefore, this editor at the same time might well urge that all practitioners of osteopathy and other cults enter some good medical school and complete their medical education so they may give their patients the benefit of the researches of Pasteur, Koch, Klebs, Flexner and others, which have done so much to reduce the death rate from contagious diseases and saved untold thousands of lives by the prevention of epidemics. If the death of this small boy will lead to such a reform, he will not have died in vain.

THE STATES RELATIONS SERVICE

The interdependence of medicine and a large number of the natural sciences is being recognized more forcibly today than it was a few years ago. To cite a single illustration, it is not long since entomology was regarded as something quite foreign to the practice of medicine, but the growing recognition of the very important role of insects in the transmission of disease has created a demand for detailed information of the life habits of various species, such as the mosquito, the fly, the body louse and the flea. Instances of this sort could easily be multiplied. It is in harmony with these modern mutual relationships in science that the work of the U. S. Department of Agriculture has frequently been of immediate interest to the medical world. Indeed, this is true to an extent which the casual observer might not easily suspect, for various activities of the department, such as those related to the enforcement of the Food and Drugs Act, to the investigations of the Bureau of Chemistry, and other branches of this service have no peculiarly logical connection with agriculture more than with other aspects of governmental management.

Under the plans adopted by the last Congress for the reorganization of the federal Department of Agriculture, the States Relations Service was formally established by Secretary Houston, and began its activities July 1, 1915. This new organization developed on the foundation of the Office of Experiment Stations, which it will include. Of further interest from a medical point of view is the establishment of the Office of Home Economics, which will include investigations relative to foods, clothing, and household equipment and management.

The Office of Experiment Stations, which remains an integral part of the new and larger organization, was organized in 1888 under the directorship of the late Prof. W. O. Atwater. In 1894 the state experiment stations were specifically authorized by Congress to include the study of the food of man in their inquiries and report their progress to the department. At this time an appropriation of $10,000 was made for investigation, under the direction of the Office of Experiment Stations, of "the nutritive value of the various articles and commodities used for human food." Subsequent to this came the numerous contributions of technical and popular data which have done so much to extend knowledge of the science of nutrition in the United States. Some of the work, notably that involving the development of the respiration calorimeter and the measurements of the metabolism of matter and energy in the human body, has become fundamental in the science of physiology. The extensive compilations of the composition of food products—analytic records which are used everywhere for purposes of instruction and research—as well as the popular expositions of the uses of foods, and their composition and preparation for the home, have interested thousands A total of 132 nutrition publications have been issued, of which sixty-two are technical bulletins The publications as a whole, including the often misnamed "Farmers' Bulletins," have been much in demand, the total distribution amounting to millions of copies Now the scope of the work is to be increased to include studies of agricultural products in their relation to clothing and other uses in the home Anything which seems likely to lead to some progress in the long neglected field of the hygiene of clothing will surely be welcomed by the medical profession

From an initial staff of three persons, the number of employees has grown, in the Office of Experiment Stations, to more than 250, the fund for its maintenance rose from $10,000 in 1888 to $1,930 780 in 1915 We shall expect continued efficiency from the new States Relations Service

Current Comment

STATISTICS OF HEALTHY DIPHTHERIA CARRIERS

Two years ago the United States Public Health Service conducted an investigation at Detroit with the purpose of ascertaining the distribution of diphtheria carriers The determination of the percentage of carriers was made shortly after a time of greatly increased prevalence of diphtheria The conditions under which the study, which has just been reported,[1] was carried out differ from most previous investigations along similar lines in that it was not confined to groups in institutions or selected portions of the community It represented rather the incidence of diphtheria carriers determined by cultures taken indiscriminately from healthy persons of all classes Out of about 4,000 healthy persons, thirty-eight, or nearly 1 per cent, were found to harbor the *Bacillus diphtheriae* as revealed by cultures made from the throat, from the nose, or both Out of nineteen cultures isolated from nineteen carriers, two were found to be virulent, suggesting a possible 0 097 per cent of the individuals examined as carriers of virulent bacilli Twenty-nine of thirty cultures of *Bacillus diphtheriae* from clinical cases were virulent, and all thirty were acid producers Comparison of the value of different types of single cultures for the detection of carriers shows that the throat culture gives the lowest, and the combined nose and throat the highest results The latter, however, is but slightly higher than that from the nose alone The combined results of a throat and of a nose culture give markedly better findings than those of any single culture These results are believed to be a fair index of the proportion of carriers among the population Based on the total number of inhabitants, it means that in a city of half a million persons there are about 5,000 carriers of diphtheria bacilli The bacteriologists of the Public Health Service point out that the Detroit statistics are low compared with those obtained by the majority of workers in this field According to the literature cited, results above 2 per cent are found more often than results below this figure The data cited for a group of persons examined at the time of the epidemic of diphtheria at the Johns Hopkins Medical School and Hospital[2] in 1911 indicated forty-five carriers among 1,290 persons, or 3 48 per cent All reliable facts of this sort are of great value in the prosecution of epidemiologic studies in the interests of the public health

BACK-FIRING

To many who have read the much over-written case of the Chicago infant who recently came into and went out of this world with certain deformities, the question doubtless occurred What would the followers of Mrs Eddy do in such a case? Logically the followers of this cult would have done just what happens to have been done by the physician in charge Nothing And the result, of course, would have been the same Possibly because this line of thought is rather obvious, the *Christian Science Monitor* devotes over a column to the case Under the sonorous title *"Ave Medicus Imperator,"* this journalistic champion of Mrs Eddy's doctrines belabors the medical profession, charging that "the place of Caesar as a dispenser of life and death is to be taken by the modern physician," and, further, that "the hospital is to usurp the position of the arena " The article, of course, is wholly in the nature of a back-fire The poor human mite, whose short but tragic life and equally tragic death have proved such a boon to the sensational newspapers and such a grief to the thoughtful, really "passed over" strictly according to the tenets of Mrs Eddy's disciples We assume, naturally, that even the most rabid of that sect would hardly claim that thought-waves, either long or short range, would remedy a congenital deformity The baby died because "treatment" was "absent "

MISTAKEN ECONOMY AND THE TREAMENT OF THE CHRONIC INSANE

One hindrance to the adoption of improved methods in the care of the insane not infrequently is a mistaken idea of economy in the governing bodies of institutions An average layman's idea of the economic principle underlying the care of the chronic insane probably is (at least, unless he has a personal interest in some member of this unfortunate class) that, within limits of decency, the less spent the better Of course, for sheer humanity's sake, the insane must have food clothing and adequate housing accommodations, they must be restrained from doing violence to themselves or to others, must receive necessary personal attention and must not be subjected to abuse But, since the hopelessly insane are a total loss to themselves and to society, why spend money in any further attempt to improve their condition? Such, it is not unfair to surmise, is the unformulated feeling which puts obstacles in the way of individualized work with deteriorated patients Dr E A Foley, in the last issue of the *Institution Quarterly* reports the results of experiments which indicate that, quite apart from the humanitarian aspect, such work is worth while from the purely economic point of view Two of the apparently most hopeless patients in the Jacksonville (Ill) State Hospital were selected for experiment Both had records of destructiveness, filthiness and most violent impulses, both had been expensive patients on account of the amount of clothing, bedding, furniture, etc, which they destroyed, and both were deteriorating The patients were placed in charge of an especially patient and tactful attendant At first hydrotherapy was employed, then the patients' interest was aroused by means of games and light work Destructiveness and filthiness diminished, the patients became less vulgar and abusive, they became friendly to physicians and nurses Of course, cures are out of the question, but the contentment and well-being of the patients have been vastly enhanced From the financial point of view, there is a double gain Not only are the patients now no longer destroying property they are to some degree producers So far as this experiment goes, such work appears to be of value from all points of view

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[1] Goldberger, Joseph, Williams, C L, and Hachtel F W Report of an Investigation of Diphtheria Carriers, Bull 101, Hyg Lab, U S P H S, 1915, p 29

[2] Ford, W W The Recent Epidemic of Diphtheria in Johns Hopkins Hospital and Medical School General Procedures Adopted Bull Johns Hopkins Hosp, 1911 p 357 Moss W L Diphtheria Bacillus Carriers, Tr XV Internat. Cong Hyg and Demography, 1913, iv, Part 1 p 156

STREET DIRT, UNPROTECTED FOOD AND DISEASE

Prof C H La Wall, chemist of the Pennsylvania dairy and food commission, is said to have found the following assortment of objects and substances in raisins exposed for sale on a Philadelphia street pieces of prunes, beans and rice, strands of human hair and cat fur, cotton and wool fiber, straw and bits of bran, insect wings and legs, cigar and cigaret ashes, and a yellowed cigaret paper While it does not appear that any of these unappetizing accessories were exactly proved to be carriers of contagion, the findings strongly suggest the possibilities of infection from food sold from uncovered pushcarts and stands

The Potash Problem—The scarcity of potash which is used both in medicine and in manufacturing and agricultural processes on account of the European war bids fair to be abolished According to *Commerce Reports* several new methods of increasing the supply of American potash have been devised One of these is a Canadian method for obtaining potash from ordinary feldspar This consists in heating the feldspar with limestone and iron oxid at a temperature of about 2 200 F producing a partly fused mass that is easily decomposed by a weak acid From this product the potash salts can readily be extracted for further purification It is said that 106 tons of potash are wasted daily by the twenty-five or more distilleries in this country that subject molasses to a process of fermentation A New Orleans company has planned to install the process of saving the potash from distillery waste which was recently brought to attention by the United States Bureau of Foreign and Domestic Commerce Experiments to extract potash from seaweed both in this country and in the Philippine Islands have been noted heretofore It is stated that seaweed yields about 15 per cent of potash

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS, EDUCATION PUBLIC HEALTH ETC.)

DISTRICT OF COLUMBIA

History of Surgery—An interesting exhibit of books and pictures illustrating the history of surgery has been prepared by Dr Arnold C Klebs at the invitation of Lieut-Col Champe C McCulloch, Jr, M C U S Army, librarian of the surgeon general s office, and may now be seen in the Library Hall of the Army Medical Museum

Eulogize General Sternberg—At a meeting of the directors of the Washington Association for the Prevention of Tuberculosis November 6, resolutions were drafted paying tribute to the unselfish character of General George M Sternberg late president of the association, to his valuable contributions to preventive medicine and to his personal philanthropic work

Personal—Dr Philip Newton, who went to Russia in charge of a Red Cross unit, is said to have been appointed surgeon of the sixth army corps with the rank of general ——Drs Arthur M Zinkhan and Paul H Zinkhan, Washington have returned after a years' service in the war zone ——Dr William C Rives Washington, has been elected president of the Citizen's Relief Association ——Dr Thomas W Jackson, Washington who succeeded Dr Richard P Strong as head of the American Sanitary Commission in Serbia, has returned from abroad

Honor Magruder—The Medical Society of the District of Columbia held a meeting November 10 as a memorial to Dr Ernest P Magruder, formerly superintendent of the Emergency Hospital, Washington, who died from typhus fever in Serbia April 9 The work done by Dr Magruder in combating typhus was described by Dr Ethan F Butler, late director of Serbian Unit No 2, of the American Red Cross and tributes to Dr Magruder were also paid by Major Robert U Patterson, M C., U S Army, medical director of the American Red Cross, and by Dr George M Kober, dean of Georgetown University

ILLINOIS

Matteson School Closed—The public school of Matteson was closed November 20 and ordered fumigated on account of diphtheria among the pupils

New Hospital for Highland Park.—At a recent meeting of the board of commissioners of Highland Park a committee was appointed to take up the matter of a local hospital and to report at the next meeting

Personal.—Dr Marion C. Dale, McLeansboro, is reported to be seriously ill as the result of a cerebral hemorrhage ——Drs Grant Houston Herbert S Worthley, James A Clyne and Philip Le Sage have been elected members of the medical staff of St Joseph's Hospital, Joliet.

Hospital Addition Dedicated.—On November 17, the chapel and addition to St Mary's Hospital Streator, were dedicated by Father Shaunion vicar general of the diocese of Peoria After the dedicatory exercises the Sisters of St Mary tendered a banquet to the physicians of Streator and its environs over which Dr Eley E. Perisho presided as toastmaster The new addition consisting of four floors and a basement, increases the capacity of the hospital to 125 patients

Correction.—A statement was published in THE JOURNAL of November 6 regarding a scarlet fever epidemic in Decatur that the spread of the disease was due to a lack of cooperation on the part of local physicians Dr Herbert L. Wright health officer writes that this statement is incorrect and that he has observed no lack of cooperation but that on the contrary he has been requested by eight or ten local physicians to see suspicious cases with them and that their cooperation has been all that could be desired

Chicago

Health Crusade Proclamation—Mayor Thompson, on November 26 issued a proclamation designating December 10 as Children s Health Crusade Day

Diphtheria—A medical student living in Hitchcock Hall University of Chicago became ill with diphtheria November 24 after having been engaged in studying diphtheria germs

The head of the department of bacteriology is making an investigation to ascertain whether there is any carrier among the students

Personal—Dr Philip S Chancellor, who went to Europe last May as medical director of the Chicago unit, sails from France on his return on December 25——Dr Arthur Dean Bevan on November 27 was elected president of the Clinical Surgical Society at its meeting in Washington——Dr Gottlieb A Lurie has reached France on his return home from Serbia

First Aid Classes—A first aid class is being held on Wednesday afternoons at the residence of Mrs E R Cox, 1529 Astor Street, in charge of Dr Charles Adams——Mrs Arthur A. Small has organized a class of women to become trained nurses and later to affiliate with the National Red Cross of America The first meeting of the class took place at St Joseph's Hospital, November 29

Millions Needed for Health—Health Commissioner Robertson estimates that his department should have $4 907 561 to spend in 1916 Of this little more than one-half is to be devoted to health sanitation and hospital work and the remainder to the disposal of city wastes For the entire department the appropriation for 1915 was $1,507,444 and for next year his estimate has been reduced to $1,356,461

INDIANA

Schools Closed on Account of Disease—The schools of Amboy, Miami County have been closed on account of diphtheria——The schools at North Grove, which had been closed on account of scarlet fever have been reopened

Personal—Dr George W Willeford, Washington, started November 20 on an extensive trip through the west——Dr Henry C Davisson, Hartford City is reported to be seriously ill at his home——Dr and Mrs Emanuel P Masgana Vincennes, have returned to France where Dr Masgana will take service with the French Red Cross

IOWA

Personal—Dr Fred W Sallander, Fort Madison, has returned after two months in England——Dr Albertus J Burge, formerly a member of the faculty of the University of Iowa, Iowa City, has been appointed surgeon to the new Catholic Hospital, Mason City, and will soon move to that place——Fire at Hawleyville, November 8, destroyed the office of Dr Jesse D Elliott

Smallpox—At Fort Madison, November 18, it was reported that the smallpox epidemic was practically under control, there being about twenty cases in the city City Health Officer Joseph M Casey declared that the rapid spread of the disease was due to the lack of vaccination and the reporting of cases when they first appeared A census of the public and parochial schools of the city showed approximately 1,200 children who had never been vaccinated

Tuberculosis Notes—The Free Dispensary for Tuberculosis Patients established by the Visiting Nurses' Association, at 410 Century Building, Des Moines, was opened November 18 The clinic days will be Thursday and Saturday of each week and the association offers free examination and medical advice to those financially unable to pay——The Iowa Association for the Prevention of Tuberculosis has recently been organized and on the organization committee are the following physicians Drs Murdoch Bannister, Ottumwa, Frank M Fuller, Keokuk, John E Luckey, Vinton, John H Peck, Des Moines, and Herbert V Scarborough, Oakdale

KANSAS

Epidemic Diseases—On account of the prevalence of diphtheria the Ingalls School, Kansas City, has been closed——The prevalence of diphtheria has caused the closing of the public school at Dunkirk——The schools of Little River are under rigid quarantine on account of the presence of several cases of diphtheria and scarlet fever

Personal—The Kansas Supreme Court has decided that Dr Chilton W McLaughlin, health commissioner of Kansas City, is entitled legally to his office under the civil service law and cannot be ousted because of a mistake made by the civil service commission——Dr Owen G Hutchinson has been appointed city physician of Wichita, vice Dr Leon Matassarin, removed

Medical Department of State Library—The state library at Topeka has nearly 1,300 volumes in its medical department and under the terms of the Stormont Endowment Fund several hundred dollars a year are spent for new medical books and under the Sheldon Endowment Fund, $100 a year for the same purpose The library also receives about twenty medical magazines a month but the librarian states that there is no record of a physician having utilized this division of the library

KENTUCKY

Eye, Ear, Nose and Throat Clinic Opened—The Scott County Health and Welfare Association announces the opening of a clinic for the treatment of the eye, ear, nose and throat, to be in charge of Dr Edward C Barlow, Georgetown

Babies in Pediatric Service—Following a precedent established by the University of Minnesota, the University of Louisville has included in its pediatric service all newborn babies As soon as the cord is cut the baby is transferred to the pediatric service

Health Officer Closes School—The development of six cases of diphtheria among the children attending the George Rogers Clark School, Crescent Hill, Louisville, caused Dr W Ed Grant, Louisville, city health officer, to direct the closing of a portable structure which is used by a class of about forty of the younger pupils of the school

Personal—Dr Arthur T McCormack, Bowling Green, has been appointed a member of the Kentucky Conference of Charities and Corrections——The office of Dr Alvis P Ryan Albany, was destroyed by fire November 6, with a loss of $1,000——Dr Frederick P Strother, Madisonville, has been elected vice president of the Hopkins County Public Health League

Warning—The board of the Jefferson County Tuberculosis Hospital has issued a warning to the public that imposters are soliciting funds for the Waverly Hills Sanatorium These men have not yet been identified, but are salesmen of soap and toilet articles who claim that part of the receipts from the sale of their wares accure to the Waverly Hills Sanatorium

MASSACHUSETTS

Diphtheria Closes Schools—The Lynhurst Primary and Grammer School, North Saugus, was closed from November 12 to November 28, because of an epidemic of diphtheria in that district——The ninth grade of the Maple Street School, Danvers, was closed on advice of the board of health, November 18, on account of the prevalence of diphtheria

Gives Hospital to Town—Mr and Mrs Richard T Crane Jr, Chicago, have notified the Ipswich Society of their intention to give the town a hospital to be known as the Benjamin Stickney Cable Hospital in memory of their friend who was killed recently in an automobile accident The building is to be of fire-proof construction and will have accommodation for eighteen patients

Strong Lectures on Typhus—Dr Richard P Strong, professor of tropical medicine at Harvard Medical School, made his first public lecture, November 20, on his experiences as head of the International Committee to combat typhus fever in Serbia——On December 6, Drs Charles A Porter and Robert B Osgood discussed the work of the physicians and nurses in their party during the past summer

Personal—Dr William Hall Coon, Haverhill, state medical inspector for the northeastern health district, has resigned to assume new duties as medical officer with the Fisk Rubber Company at Springfield and Chicopee Dr Lyman A Jones, North Adams, health officer of the Berkshire District, has been transferred to Haverhill to succeed Dr Coon——Dr Mary T V Moore has been appointed a member of the staff of school physicians of Boston

Value of Bacterial Vaccine in Typhoid Fever—The Evans Memorial for Clinical Research, Boston, is desirous of communicating with as many physicians as possible who have used bacterial vaccine in the treatment of typhoid fever, that they may collect statistics regarding the efficiency or nonefficiency of this method as a therapeutic measure Dr Frank C Richardson, clinical director, requests that any physician who has treated with the method will communicate with Dr William H Watters, 80 E Concord Street, Boston, when blank forms will be sent that uniform reports may be made

NEVADA

Personal—Dr Sidney K Morrison, Reno, has resigned as physician of Washoe County——Drs Martin A Robison and Henry Bergstein, both of Reno, have resigned from the City Board of Health

Scarlet Fever—November 9, a meeting of the mayors of Reno, Sparks and some other towns with the county com missioners and state and local boards of health was held to consider measures to prevent the spread of scarlet fever which was epidemic in the state There had been some laxness in reporting cases to the local authorities and physicians were warned that such reports must be made in accordance with the quarantine laws of the state.

NEW YORK

A New Step in the Care and Cure of Insanity—The State Hospital Commission announces that it has decided to establish additional mental dispensaries in connection with the state hospitals for the insane and will employ additional field agents

Another Death from Anthrax Reported—A death from anthrax has been reported from Endicott, the correctness of the diagnosis having been confirmed by the city bacteriologist of Binghamton It is believed that the victim became infected in the Endicott tannery where he was employed

Resolutions Regarding Dr Trudeau—The medical staff and patients of the Workmen's Circle Sanatorium, Liberty, have adopted resolutions regretting the death of Dr Edward Livingston Trudeau who had for thirty-one years worked untiringly and unselfishly in the interest of the consumptive workingmen and women and expressing their appreciation of his work by conferring on the hospital building of the Workmen's Circle Sanatorium the name 'Trudeau"

New York City

Personal—Dr Cecile L Greil was one of the survivors of the *Ancona,* sunk by a submarine in the Mediterranean ——Dr Luvia M Willard Jamaica is the first woman to be appointed a member of the staff of the Jamaica Hospital ——Dr Edgar L Gilcreest has returned from service with the American Red Cross in Europe

Medical Society of the County of New York Elects—At its one hundred and tenth annual meeting the Medical Society of the County of New York elected the following officers president Dr Frederick E Sondern first vice president, Dr J Benton Squier Jr , second vice president, Dr Charles H Peck secretary Dr John Van Doren Young assistant secretary Dr Daniel S Dougherty , treasurer Dr Charles H Richardson, censors for two years, Drs Howard C Taylor, Willy Meyer and Floyd M Crandall

Plan for Great Medical Center Receives Setback—Announcements have been made from time to time with regard to the project of consolidating the College of Physicians and Surgeons of Columbia University and the Presbyterian Hospital and some months ago an option was secured on the American League Baseball Grounds, a tract of land comprising 10½ acres with the understanding that the university would contribute $1 000 000 when the time came to take up the option The Presbyterian Hospital was to contribute a like amount Columbia University has been unable to secure the amount of money required so that the purchase of this particular site will have to abandoned, but it is understood that the plan for consolidation has not been abandoned but has only received a setback

PENNSYLVANIA

Society Donates Sterilizer—The members of the Elwood City Medical Society have presented the Elwood City Hospital with a sterilizer for use in the operating room

Rabies Patient Bites—Under date of November 26 it was reported from Pittsburgh that a rabies patient who escaped from the Allegany General Hospital had bitten fourteen persons Eleven of the victims were said to have been sent to the Mercy Hospital to undergo the Pasteur treatment Among those bitten were Hospital Superintendent Herbert Beamer and four staff physicians The patient was captured and returned to the hospital where he died

Philadelphia

Personal.—Dr Edward H Bedrossian has been appointed assistant medical inspector and Dr Charles M Strotz, assistant hospital physician at the Hospital for Contagious Diseases and Dr Frederick C. Chirinos, outdoor physician in the Bureau of Charities

Correction Uplift—The director of the Department of Public Safety has appointed an advisory board whose especial functions shall be the improvement of the housing and medical service in hospitals and other municipal institutions for the care of public charges The staff includes Drs Ella B Everitt J Leslie Davis Charles H Frazier Elijah H Siter Thomas H Fenton T H Weisenburg Horace Phillips, and James M Anders

Questionable Nurse Directories Here Another Warning—Physicians of Philadelphia and environs are again being circularized by so-called nurse directories Ethical private homes or directories for registered and "experienced" nurses are known by their absence of preposterous claims but quite the contrary is true of the unscrupulous variety, those managed for profit only" if not worse The safe plan for practitioners is to rigidly avoid these trick concerns, and unless sure of the private nurse homes, to depend only on nurses from a recognized hospital or the Nurse Directory of the College of Physicians The latter supplies "years of experience" attendants as well as registered trained nurses

Hospital Contract Awarded—The contract for the erection of New Misericordia Hospital at 53d and Cedar Avenue, was awarded November 17 The building will be of the Italian Renaissance style of architecture and of fireproof construction The main building will stand in the center of a big plot, will be 45 feet wide and 179 feet long From the ends of the building will extend wings so arranged as to make every room an outside one, with plenty of air and sunlight To the rear of the hospital will be a building to house the employees of the hospital and the mechanical plant. To the east will be the nurses' home and to the west the convent for the sisters The second and third floors will be occupied by rooms and suites for private patients

Aid for Drug Victims—Acting under the suggestion of Francis Fisher Kane United States District Attorney, a committee has been formed of well-known citizens of Philadelphia headed by Edward W Bok and C H Ludington, to employ and direct a skilled social worker to investigate and aid habitual users of narcotics, more especially those addicted to heroin, morphin and cocain More than $1,000 has already been raised to be used in working out this drug problem The committee is anxious to obtain at least $3,000 to defray the expense of the first year s work It hopes to raise this sum before the United States District Court convenes on December 6, when more than eighty drug cases will be called for the court's consideration Many of these persons are habitual users The committee will not confine itself to cases referred to it by the Federal courts but will take up recommendations made by the State courts and the various societies and agencies throughout the city in an effort to effect a reform in any case that is deserving The duty of the agent will be to investigate the facts and when the case is not hopeless follow up the individual obtaining the necessary medical assistance and later, if needed, an opportunity of obtaining employment

WISCONSIN

Dispensary Association Formed—The Milwaukee Dispensary and Hospital Association, with a capital stock of $10 000, was incorporated, November 6, by Frederick Westwood B F Muehecke and Eugene Shapf

Sanatorium for Marathon County—The county board of Marathon County decided by a vote of 44 to 19 November 10 to appropriate the sum of $35 000 for the construction and equipment of a county sanatorium for tuberculosis

Inquiry Into Industrial Conditions—Through the agency of the Wisconsin Industrial Commission, Surgeon-General Rupert Blue has assigned Surgeon Joseph W Schereschewsky and P A Surg Robert Olesen, U S P H S to the Wisconsin field and they began their work in Milwaukee, November 15

Sanatorium Dedicated—At the dedication of Muirdale, the new Tuberculosis Sanatorium for Milwaukee County November 19 Dr Hoyt E Dearholt Milwaukee presided and addresses were made by Drs Theodore B Sachs, Chicago and Louis F Jermain Milwaukee, president of the Wisconsin State Medical Society

Personal—Dr Arthur J Patek, Milwaukee underwent an operation for appendicitis November 12——The state board of control announces that it has asked for the resignation of Dr Norman F Hoffman superintendent of the State Tuberculosis Sanatorium Wales——Dr Frank S Wiley has been elected chief of staff of St Agnes' Hospital, Fond du Lac ——Dr John D McRae Chippewa Falls, has been appointed physician for the Paint Creek Dam

Antitoxin and Vaccines—The health officer at Milwaukee is endeavoring to get through the city council an ordinance requiring the reporting to the health department of all sales of antitoxins and vaccines, and that the name of the person on whom the antitoxin or vaccine is to be used must be in the hands of the department within twenty-four hours The object is to secure a more complete record of infectious dis-cases A fine is provided in the proposed ordinance for failure to make proper reports

CANADA

Tuberculosis Diminishes in Ontario—The reduction in the death rate from tuberculosis in Ontario continues, it having dropped to 85 persons per 100,000 of population Eleven years ago the rate was 148 persons per 100,000

Syphilis Spreads—Dr Charles K Clarke, superintendent of the Toronto General Hospital, estimates from his weekly mental clinic that syphilis is spreading in Ontario Heretofor general paralysis has been rare among children in Ontario, but it is now increasing Dr Clarke states he deals with thirty cases of mental defectives and imbeciles on the average each week at his clinic and that conditions are getting so serious that radical measures will soon have to be taken in that province

Antityphoid Inoculation—At the outbreak of the war the Board of Health of Ontario offered to supply free of charge to the Canadian government all the antityphoid vaccine required for Canadian troops, as well as for those sent from Newfoundland This offer was accepted All the vaccine has been manufactured in the laboratory of the Ontario Board of Health in Toronto Excellent results have been achieved in the prevention of typhoid fever in the Canadian troops

Diphtheria Antitoxin—Prior to May, 1914, diphtheria antitoxin was not manufactured in Canada The cost of this product, including other serums annually imported into Canada, was $120,000 In May, 1914, an arrangement was made with the University of Toronto whereby antitoxin is supplied to druggists and boards of health at a very much reduced cost The cost of the product previously often prevented large doses For example, in the year 1913 the death rate from diphtheria in Toronto, apart from the cases in the Isolation Hospital, was 16 per cent, but where the dosage was large and prompt, 6 per cent Nearly all the provinces of the Dominion now avail themselves of the product of the Ontario Board of Health

Low Death Rate in War Hospitals—Last month the Canadian hospital at Le Touquet, France, was removed to Outreau, near Boulogne, and Col Adam T Shillington, Ottawa, was given a week's absence in London Colonel Shillington visited the new Ontario hospital being erected at Orpington, which will probably be opened in January During the eleven months Colonel Shillington has been in command of the hospital at Le Touquet, more than 8,000 patients have been handled, only about 500 of whom were Canadians The total deaths which occurred at that hospital in the eleven months have only been forty-four Colonel Shillington estimates that the death rate in the field has been about 20 per cent of those hit, and that the wounds of a large proportion of the soldiers are not of a serious nature He says that the medical branch of the Canadian army has done splendid work They have never been short of any supplies and no branch is doing its work better than the medical branch He has been very much impressed with the way the women turned out to work in France

Personal—Dr Kenneth D Panton, Vancouver, B C, who went to France with the first Canadian contingent, has been placed in charge of an ambulance section and given the rank of lieutenant-colonel——Nothing has lately been heard in Ottawa of the Hon Dr Henri S Beland, St Joseph, Que, ex-postmaster-general in the Laurier government It is known that he is a prisoner in Germany, but recent inquiries, both through the British War Office and at Washington, have failed to elicit any information——Col Adam T Shillington, Ottawa, formerly commanding No 2 Stationary Hospital at Le Touquet, France, has been appointed assistant director of medical services at the Canadian camp in England Major Henry C S Elliott, Cobourg, Ont, has been transferred from No 2 Stationary to No 2 Canadian General Hospital ——Col Herbert S Birkett Montreal, officer commanding McGill University Base Hospital in France, has cabled to Montreal stating that the hospital is to be moved to another situation, but its destination was not mentioned——Dr Edmund P Lewis, who has been acting as assistant superintendent of the Toronto General Hospital during the absence of Dr Alfred K Haywood at the front, has resigned his position to qualify for overseas service

GENERAL

National Examination Day—Wednesday, December 8, has been named by the various antituberculosis associations and also by the Life Extension Institute, as National Medical Examination Day, on which it is suggested that everyone undergo a physical examination with special reference to tuberculosis

Red Cross Seal for Next Year—As a means of stimulating originality of designs for the Red Cross Christmas seals for 1916, the American Red Cross has decided to conduct a competitive contest and to offer prizes taken from the expense fund set aside for the antituberculosis campaign Five prizes will be given valued at $100, $50, $25, $15 and $10, respectively Further particulars and specifications may be obtained by communicating with the American Red Cross, Washington, D C All designs submitted must be in the hands of the Red Cross not later than Feb 1, 1916

Interstate Society Organized—The Montana-North Dakota Medical Society whose membership is composed of physicians of northwestern North Dakota and northeastern Montana, was organized at a meeting held in Williston, November 20, and the following officers were elected president, Dr Melverton E Trainor, Stanley, N D, vice president, Dr Edward J Hagen, Williston, N D, secretary, Dr Frank W MacManus, Williston, N D, and directors, Drs Loyd B Dochterman, Williston, N D, and James H Drake, Mondak, Mont, and Dr Frank O Brigham, Stanley, N D

Deaths Abroad—Henry Charlton Bastian, M R C S, England, 1860, F R C P, London, 1870, aged 78, a well-known English neurologist and biologist, a champion of the theory that life is a form of energy capable of spontaneous growth and author of several works advocating this theory, professor of pathologic anatomy and principles and practice of medicine and professor emeritus in University College, London, censor of the Royal College of Physicians and consulting physician to the National Hospital for the Paralysed and Epileptic, London, died at his home in Fairfield, Chesham Bois, Buckinghamshire, England, November 17

States Guard School Sanitation—Forty of the states of the union have taken legal action toward safeguarding the sanitation of public school buildings In thirty-eight states there are legal requirements regarding the school site, in nineteen states the laws prohibit the location of the school building within a specified distance of houses where liquor is sold, or other disreputable resorts or factories, thirty states have taken up the regulation of the water supply of public schools and in thirty-six states some form of protection against fire and panic has been provided

Tri-State Physicians Meet—The thirty-second annual meeting of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee was held in Memphis, November 16 to 18, under the presidency of Dr William P Hicks, Earl, Ark, and the following officers were elected president, Dr Arthur G Hudson, Raines, Tenn, vice presidents, Drs Samuel D Robinson, Clarksdale, Miss, Robert E Bradsher, Marmaduke, Ark, and John W Morris, Somerville, Tenn, secretary, Dr James L Andrews, Memphis (reelected), and treasurer, Dr James A Vaughan, Memphis (reelected)

Railway Surgeons Meetings—The twenty-first annual convention of the Big Four Railway Surgeons' Association was held in Indianapolis, November 18, and the following officers were elected president, Dr Clayton W Russell, Springfield Ohio, vice presidents, Drs S H Nelson, Cleveland, John T Montgomery, Charleston, Ill, and Austin S McKitrick, Kenton, Ohio, and secretary-treasurer, Dr Leonard A Ensminger, Indianapolis——At the fourth annual meeting of the Surgical Association of the Chicago and Alton Railroad Company held in Bloomington, Ill, November 19, Dr William E Guthrie, Bloomington, was elected president, Dr H Parrish, Vandalia, Ill, vice president, and Dr Miles B Titterington, St Louis, secretary

Personal—Surgeon-General Rupert Blue, U S P H S, after a visit to the meeting of the Southern Medical Association at Dallas, inspected the quarantine station at New Orleans——*Asst Surg Gen Henry R Carter*, U S P H S, who recently went to Porto Rico to investigate a fever supposed to be yellow fever, has been seriously ill with dengue but is now reported to be out of danger——Dr Ferdinand Shoemaker, assistant medical supervisor of the United States Indian Service, Washington, is making an inspection tour to isolated colonies of Indians who are in charge of L D Creel, special agent in Utah The reason for this inspection is the recent appearance of trachoma among the Indians

Impostor Swindling Physicians—Physicians throughout the country have been victimized recently by an individual under various aliases Complaints have come from Dr Burnett W Wright and Dr Arthur McCormack of Bowling Green, Ky, that their names have been falsely used The individual was confined in the county jail at Bowling Green on the charge of forgery It is stated that since his release he has been making skilful pleas to physicians, securing money from them under false pretenses referring among others, to Drs Wright and McCormack He is described as a slender person, with light sandy hair, small blue eyes, of good physique, rather pleasing address, and about 5 feet 7 inches in height Any information concerning him should be forwarded at once to either of the above-mentioned physicians, who will take steps to have his activities stopped

Bequests and Donations —The following bequests and donations have recently been announced

James Walker Memorial Hospital Wilmington N C, an annex to be used as a maternity ward and hospital for infants and children to cost about $30 000 as a memorial to their deceased daughter, by Mr and Mrs James Sprunt Wilmington

To found a free medical dispensary in Milwaukee $300 000 by the will of Mrs Antoinette A Keenan

Evanston Hospital Association, a tract of land valued at $15 000 by James A. Patten Evanston

Allegheny General Hospital, Pittsburgh for the erection equipment and endowment of a research laboratory at a cost of $400 000 donated by the children of the late William H Singer, Pittsburgh, in his memory

Grandview Hospital Philadelphia a donation of $25 000 by two Philadelphia manufacturers and $1 000 from a New York business man on condition that the hospital shall be so located as to provide the greatest convenience for and be accessory to the largest number of the population of the Sellersville Perkasie North Penn section of the city

War Against Mosquitoes —War against the mosquito colonies of New York, New Jersey and Connecticut has been declared. At a conference of experts representing the United States Public Health Service and the health departments of these three states, a committee of ten was appointed which will have power to draft the proposed legislation and to carry on an educational campaign against the mosquito under the direction of the Public Health Service The committee consists of Dr Haven Emerson health commissioner of New York, Surgeon Charles P Wernenbaker, U S P H S, Dr L. O Howard chief of the department of entomology of the Department of Agriculture, James T B Boles, Dr Charles F Bolduan, director of the Bureau of Public Health and Education of the New York Department of Health, John E. Weier park commissioner of Queens County, Dr Edward H Codding New Rochelle, Dr Alvin W Klein health officer of Greenwich, Conn, John T Sprague, Stapleton, N Y, and James L. Laidlaw

Psychiatrists Meet.—A meeting of the Interstate Psychiatric Association was held on November 23, at the Sheppard and Enoch Pratt Hospital Towson Md A constitution was adopted which specified that residents of the states of New Jersey, Pennsylvania, Maryland and Virginia and the District of Columbia, who were interested in neurology or psychiatry were eligible to membership, and that physicians in other states might by vote of the association be elected to associate membership The object of the association is to bring together men who are working in special institutions, in general hospitals, or are in private practice, and who are devoting special attention to the care and treatment of mental and nervous diseases The following officers were elected to hold office for three years president, Dr Henry A. Cotton medical director of the New Jersey State Hospital Trenton, vice president, Dr Edward N Brush superintendent of the Sheppard and Enoch Pratt Hospital, Towson Md, and secretary, Dr Samuel T Orton, clinical director of the Pennsylvania Hospital West Philadelphia Meetings will be held twice yearly

Tetanus Following Vaccination —Recently there has been an epidemic of smallpox in Hammond, Ind, and in West Hammond Ill There have been between thirty-five and forty cases of smallpox in this vicinity during the last two months A general voluntary vaccination followed the outbreak of the disease, and approximately 2,300 persons have been vaccinated since the recognition of the disease in the community On November 23 a boy about 9 years old died of tetanus, and on November 26 a boy about 7 years old died from the same disease. The former had been vaccinated about seventeen days preceding the recognition of the first symptoms of tetanus, in the case of the second boy the time elapsed between the date of vaccination and the onset of the first symptoms is rather indefinite but was either fifteen or twenty-two days The doubt exists owing to the fact that two series of vaccination were made on the children in the school which the boy attended No other persons of those vaccinated have shown symptoms at the time of this writing December 1 Both cases occurred in West Hammond, Ill One patient was transferred to a hospital in Hammond, Ind, where he died Thirteen hundred persons where vaccinated in West Hammond, Ill, the vaccinations all being made with vaccine points from the same source The period which elapsed between the dates of vaccination and the development of the symptoms was at least fifteen days

The Nobel Prize in Medicine —According to cable despatches R Barany of Vienna has been selected as the recipient of the 1914 Nobel prize in medicine, as already mentioned, for his research on physiology and pathology of the cochlea and vestibule of the ear One of his principal works was on the nervous disorders of the internal ear, published in Lewandowsky's 'Manual of Neurology" in 1910, but his chief service to science has been in the line of topical diagnosis of cerebellar affections by means of internal ear disturbances He is privat-docent of otology at the University of Vienna but has been a prisoner of war at Merw, in the Trans-Caspian district of Russia, since the fall of Przemysl He is not yet 40, owing to a stiff knee he was not called to the colors but volunteered his services and is said to have been busily pursuing his special research as long as opportunity offered in the care of the wounded The latest news from him was to the effect that he had contracted malaria in his captivity

This is the first Nobel prize in medicine to go to Austria The other recipients have been Behring, Ross Finsen Pawlow Koch Cajal and Golgi, Laveran Ehrlich and Metchnikoff Carrel and Richet Germany has thus received the price four times and France three, and England, Denmark, the United States Spain and Italy, Switzerland Sweden and Russia once each unless Metchnikoff and Carrel should be credited to Russia and France respectively instead of to Paris and New York where they reside

The awarding of the Nobel prize in medicine for 1915 has been adjourned till 1916 and petitions have been received urging that the other prizes for 1914 be reserved in the same way till 1916

FOREIGN

Distinguished Chemist Dies —Raphael Meldola, eminent chemist of London, who discovered many new coal tar products and who has been for the last three years professor of organic chemistry in the University of London, died in London, November 16, aged 66

WAR NOTES

Ambulance Donated.—Mrs W A. Velie Moline Ill has donated an ambulance to be placed in the service of the American Red Cross in Europe.

Supplies for Harvard Unit.—The Surgical Dressings Committee has shipped ten cases of dressings consisting of sponges, cotton pads and bandages to France to be used by the Harvard Medical Unit. In addition the workers of the committee have threaded with black silk 1 000 needles, which, sterilized and carefully protected, will be delivered to Dr Edward B Towne to be used in brain surgery

American Hospital Opened in Petrograd.—The American Hospital, Petrograd was formally opened November 14 Hon George T Marye, American Ambassador delivered the principal address and a portrait of Grand Duke Alexius was presented to the hospital by Russian friends The institution was opened in 1914 with twenty beds and now has doubled its facilities

Cesarean Section by Bomb Shell —During the bombardment of Rheims the lying-in department of the public hospital was transferred to the cellars and the service went on without a break and without fatal infectious complications Henrot reports that a new-born child, a fine specimen, was brought in alone and when he inquired for the mother learned that on the way to the maternity she had been killed by a shell which had torn open the abdomen and the child had only to be lifted out

Appeal for Red Cross Contributions —President Wilson November 25 issued an appeal to the American public to increase their efforts to alleviate the suffering in the war area of Europe by liberal contributions The American Red Cross thus far has received about $1 600 000 and has sent in the zone of war and maintained nearly 400 surgeons nurses and sanitarians, has given financial aid to hospitals and other Red Cross institutes, and has purchased and transported nearly 4 000 000 pounds of hospital supplies and equipment The resources of the American Red Cross are now reduced to less than $50 000 with which to reach the great demands of the approaching winter Contributions may be forwarded to any state or local headquarters of the American Red Cross or to the national headquarters, Washington, D C

The New Food Regulations in Germany—The *Deutsche med Wochenschrift* in commenting on the regulations which went into effect November 1, deplores the delay in official regulation of the food supply "The authorities," it says, "have procrastinated from the first in this matter, notwithstanding the evil experiences of last year The new regulations restrict the consumption of meat and lard On Tuesdays and Fridays no meat, fresh or dried, and no meat dishes can be sold to consumers On Mondays and Thursdays the restaurants and hotels, etc, are not to serve any kind of meat, game, poultry, fish or other dishes which are cooked with fat or bacon, and lard cannot be sold On Saturdays no pork is to be sold to consumers Abstention from meat and from the use of lard and other fats on the specified days has not been decreed for private households as it is expected that the well-to-do will voluntarily conform to the same restrictions The aim of the decree is essentially to ensure the distribution to all in the most equitable manner of the supply of meat which in itself is ample Circumstances may render it unnecessary to enforce these decrees after the consumption of meat has once been regulated The census of domestic animals taken October 1 shows a gratifying increase in the stock of hogs To prevent this restriction in regard to meat leading to extortionate prices for game and fish, and further to combat the excessive prices already demanded, the senate has empowered the imperial chancellor to establish maximum prices for fish and game at wholesale in the Berlin market, after conferring with experts These wholesale rates are to prevail throughout the empire unless certain districts modify them to conform to local market conditions When the settled prices have been thus established, communities with over 10,000 inhabitants are to set a maximum retail price The senate has also empowered the chancellor to establish maximum prices to the producers for potatoes These producers' prices range from 61 to 75 marks (2 75 to 3 05 marks—about 70 cents—per hundred pounds) All communities with more than 10,000 inhabitants are required to set a maximum retail price and other communities are empowered to do so The maximum price charged by the producer in the same district as the potatoes are sold at retail must not surpass 1 3 mark The wholesale price must be regulated according to local conditions A decree provides further for the expropriation if need arises of all potato fields more than one hectare (about 2½ acres) in extent"

LONDON LETTER

LONDON, Nov 12, 1915

Serious Financial Position of the National Health Insurance Scheme

The difficulties of the working of the insurance act in consequence of its socialistic nature, which encourages extravagance, have been pointed out from time to time in previous letters The government estimates have been exceeded in several directions with the usual result—an increased drain on the taxpayer At the present moment the huge cost of the war, estimated at $25,000,000 a day, prevents any increased contribution from the state being entertained The position is well described by Mr Kingsley Wood, a member of the National Insurance Advisory Committee and vice chairman of the Faculty of Insurance, in an address given to that body He said that the insurance scheme for the present year would cost nearly $125,000,000 The state would have to pay nearly $35 000 000 and employers and workers the balance The cost of central administration by the respective commissions was officially estimated at nearly $2,500,000 and stationery printing and office accommodation would cost nearly $1,500,000 more The government actuaries' original estimates of the state subsidy for the current year seemed likely to be exceeded by $8,500,000 In spite of these huge commitments, many urgent financial questions have arisen There is a large deficiency in connection with women insurers Before the war, $2,500,000 had been set aside in an endeavor to meet the situation, but this amount had to be used for other purposes The deficiency had since increased largely on account of the great influx of women workers as a result of the present labor conditions If a parliamentary grant was impossible—and the present insurance minister had some time ago publicly stated that at the present time it would be futile to apply for extra grants—in certain societies the male members were liable to foot the bill, while in others the whole amount would have to be borne by women insurers alone It was a wasteful policy to allow this matter to drift, and it was unfair to old and new compulsory insurers alike It was well worth consideration whether it would not be better now to face either the raising of the contributions or the reduction of benefits The state of the sanatorium funds also demanded attention Certain insurance committees had long waiting lists of consumptive insurers—there were 200 in London, for instance—but committees perforce had to reduce the number of beds, while others were limiting the amount of extra nourishment for insured persons Even the famous cod liver oil treatment was now threatened Again, $25,000,000 a year was being paid for medical treatment A case has been cited of a Scottish physician who had received, under the present system, $380 in respect to a solitary patient on his panel list, and who during the year had required no medical treatment Many thousands of persons had not yet chosen a physician and the shortage of physicians and drugs accentuates the problem Advocates alike of a state medical service or of the old friendly society system of medical treatment have a case on the score of economy alone The financial arrangements with pharmacists are also admittedly unsatisfactory Some are overpaid, and others underpaid, and recourse is now advocated to the old system of stock mixtures The whole administration of the act cries aloud for simplification Persistent demands are being made for an immediate and impartial inquiry

Failure of an Attempt to Charge a Physician for Extravagant Prescribing

Another example of the chaotic condition of the insurance act is the expenditure on drugs From the fees of physicians having no direct interest in economy, there are powers to deduct expenditure which can be shown to be extravagant The trouble often is to show this Recently the insurance committee of the Borough of Leicester deducted $150 from a physician's account for this cause, but he succeeded in obtaining an injunction against them in the law courts His case was that he ordered such drugs as were requisite The pharmaceutical committee reported to the general committee that too many drugs had been ordered by the panel physicians, and that the drug fund was insufficient to pay for the drugs ordered An arrangement was made by which $1,000 was transferred from the medical fund to the drug fund, and this sum was allocated among the physicians on the panel by calculating the average quantity ordered by each, and requiring each physician who had ordered drugs in excess of the average to make a contribution in proportion to his excess For the physician in question the sum was $150 The judge granted an injunction against this deduction on the grounds that the pharmaceutical committee did not investigate the question of extravagance but simply made the deduction because there was a deficit in the drug fund

Portuguese Help for the British Wounded

Portugal is arranging hospital accommodation for wounded from the Dardanelles and from Serbia Seven spas have been selected as suitable for the reception of our wounded The government has offered to make structural alterations of any buildings offered by private generosity in order to fit them for hospital purposes Hotels, sanatoriums and hospitals are being inspected in order to determine their suitability for such conversion In addition to this, it has been proposed in the Portuguese parliament that all the public sanatoriums and grounds in the island of Madeira be handed over to the British Red Cross for the duration of the war, and that there shall be a suspension of import duties on all necessary stores and supplies These generous proposals emphasize the traditional amity between Portugal and this country

PARIS LETTER

PARIS, Nov 4, 1915

Death of Professor Bouchard

Dr Bouchard, formerly professor of general pathology and therapeutics at the Faculte de medecine de Paris has just died after a long illness, at Lyons, aged 78 In 1879, he became professor of general pathology and therapeutics He was elected a member of the Academie de medecine in 1886 and a member of the Academie des sciences in 1887 He became president of the latter academy as well as of the Societe de biologie

In Professor Bouchard disappears one of the great figures of French medicine He was both a laboratory man and a clinician Bouchard published a large number of works on anatomy, physiology, pathology, clinical medicine, medical chemistry and the history of medicine. He is known especially for his theory of diseases due to retardation of nutrition, his works on autointoxication, etc. In 1882 he published a "Treatise on Diseases of Nutrition," in 1892 a work on "Pathogenic Microbes," and he edited an important "Treatise on General Pathology" in five volumes containing the work of several of his pupils. He was also editor of the *Journal de physiologie et de pathologie générale*.

Bouchard was not very popular with the medical profession. This was due in part to the fact that certain of his ideas, especially on the subject of the reform of the *agrégation*, were not in favor and in part to the fact that he was of too authoritative a temperament to be popular.

The War

MALINGERING IN THE ARMY

At a recent session of the Societe de chirurgie de Paris, Dr. Hartmann, professor of the surgical clinic in the Faculte de medecine de Paris and surgeon of the hospitals, reported some observations made by Dr. Reynes of Marseilles on several cases of phlegmon caused by injections of gasoline under the skin. The characteristic of these phlegmons, according to Reynes, is the appearance of the line of incision, which shows tissues thickened, hardened and board-like alternating with somewhat softened purulent points, also bands of reddish inflammatory fungosities alternating with yellowish zones of disintegrating tissues. In other cases there is a mixture of acute phlegmon and eschar. Finally the wound exhales an unmistakable odor of gasoline which may last for several days.

Professor Pozzi with Dr. Agasse-Lafont has observed a case of this kind. These phlegmons have a large number of differential characteristics which may be classed in the order of their importance as follows: (1) suspicious clinical symptoms such as absence of ecchymosis and grumous appearance of pus which contains fragments of slough tissues; (2) signs showing the caustic and nonmicrobic origin of the suppuration (sterile pus unless there was contamination at the time of puncture or a secondary infection after the incision); (3) chemical signs which determine the diagnosis. One reservation should be made, however. The possibility should be kept in mind that the patient may have used for therapeutic purposes a liniment or external application, for in some cases the external use of turpentine oil may produce real phlegmons.

At a recent session of the Reunion medicale de VI-e armee, Drs. Natalelli and Henri Roger, professor of experimental and comparative pathology at the Faculte de medecine de Paris and physician of the hospitals, read an interesting paper on erythema of the face produced to simulate erysipelas. In an erysipelas service they observed from February to June eleven cases of erythema of the face characterized by bloating and a diffuse redness of the skin generally less intense than in erysipelas and without peripheral swelling and by vesicles of the size of a pinhead, much smaller than the erysipelatous phlyctenae and situated as much toward the periphery and outside as in the center of the swelling. These vesicles dry rapidly, producing fine yellowish crusts of a smaller size and of shorter duration than those of eczema of the face. These erythemas are localized especially on the cheeks, forehead, submaxillary and mastoidian regions and more rarely on the nose. They are rarely accompanied by any rise in temperature or by any disturbances of the general condition. They reach their height almost at once and if they are carefully watched recover in a few days without any treatment. They are caused, as a few malingerers have finally confessed, by friction of the face with a rubefacient or vesicant substance, especially with a chapsia or so-called deadly carrot. Besides these sufficiently characteristic clinical data the suspected antecedents of the subject may aid in the diagnosis, as in a case in which convalescent leave had been refused after an attack of diphtheria. As soon as punishments or threats of punishment were employed the number of cases diminished greatly.

THE FLARING UP OF LATENT INFECTION IN WOUNDS OF WAR DISTURBED BY SURGERY

A paper by Dr. Phocas gave rise to an interesting discussion on this subject during two sessions of the Societe de chirurgie de Paris. After a very insignificant traumatism as well as after a major operation infection may flare up apparently without external cause in a wound which appears to have recovered from the original infection. Such cases of auto infection which have sometimes been explained as due to latent germs have become in recent years almost negligible in current surgical practice. They have again become a practical question in connection with wounds of war, after which they are often observed. Wounds which are granulated and no longer produce a rise of temperature again begin to cause fever on being made to bleed. A knee wound which had been drained for a long time no longer caused fever; the evening after the drains were disturbed the fever appeared. An old traumatic osteomyelitis after surgical operation became lit up again with an erysipelatous eruption and pyocyanic pus. A patient who had a limb amputated for gaseous gangrene and a reamputation performed at the end of two months on a chronically suppurating stump had another severe attack of gaseous gangrene to which he succumbed.

These facts have considerable importance. One is compelled to admit reinoculation from germs which doubtless are imprisoned and latent in the tissues but which suddenly make irruption into the circulation after a surgical operation. These reinfections have this characteristic: They become more serious than the original infection; they suggest increased virulence, a more favorable soil, a mass inoculation and perhaps also other unknown factors of which anaphylaxis may give us a comparative idea.

Dr. Bazy, surgeon of the hospitals of Paris, thinks that what characterizes latent infection is the reproduction of the same complications under the influence of the same or analogous conditions. This is not true of at least one of the cases reported by Phocas. Bazy had previously performed an operation on a patient for a limited gangrene of the leg probably due to a ligature of the femoral artery in its lower portion. After a reamputation performed by Phocas the patient succumbed to a fulminating gaseous gangrene. When after an operation one observes infectious complications it is wiser, more reasonable and more practical to look to one's self, one's assistant, one's instrument, dressing, etc., for the cause rather than to the patient.

Dr. Phocas replied that it is equally possible that gaseous gangrene at the outset may have assumed a benign form, especially since gaseous gangrene does not seem to be so distinct a pathologic entity that it cannot take both benign and serious forms.

Dr. Pierre Delbet, professor of clinical surgery at the Faculte de medecine de Paris, considers absolutely erroneous Bazy's assumption that a latent infection can be postulated only if the secondary manifestations are like the original ones. Germs of the same species may produce very different manifestations. Phocas has done well to call attention anew to such facts, for it is quite certain that we are exposed at present to special danger from latent infections. Secondary operations on patients after complete cicatrization, especially operations on the bones, give rise to manifestations to which we have not been accustomed.

Professor Quenu observed a soldier in whom the first two phalanxes of a finger had been destroyed three weeks previously. The wound was in excellent condition. The finger was amputated and the operation was followed by cicatrization by first intention, but tetanic complications developed, at first without fever, and finally caused the death of the patient.

Dr. Tuffier, agrege professor at the Faculte de medecine de Paris and surgeon of the hospitals, performed, under operative conditions which left nothing to be desired, a great number of reamputations of stumps which had once suppurated but which had been cicatrized for several months. He was convinced by repeated evidence that there exist in the depths of these stumps infectious agents capable of being reactivated by a new operation and capable of producing serious results. In one case gas developed under suture.

Dr. Chaput, surgeon of the hospitals of Paris, has also observed several cases of lighting up of previous infections by surgical operations. Accordingly, especially in alcoholics who have had attacks of erysipelas, he is very sparing with secondary operations.

Dr. Delbet declared that he was not surprised at the case of tetanus observed by Quenu. He had at the time in his service two patients who had had tetanus infection in their wounds. He gave them, from time to time, injections of tetanus antitoxin and they have up to the present presented no symptoms of tetanus, but it is very possible that after recovery there may be tetanus bacilli in their tissues (it is known how resistant this bacillus is in its sporulated form) and a later operation might possibly cause operative tetanus.

Dr Schwartz, agrege professor at the Faculte de medecine de Paris and surgeon of the hospitals, saw a few months ago a patient who had ankylosis of the shoulder after fracture of the articulation by a projectile The joint had been mobilized and the patient was attacked with tetanus, which seemed to be due to latent infection and which took on a chronic form

GLOVES FOR USE IN ROENTGEN-RAY WORK

Dr Mauclaire, agrege professor at the Faculte de médecine de Paris and surgeon of the hospitals, showed the Societe de chirurgie de Paris some gloves which are very pliable and are impermeable to Roentgen rays The solution, which is easily removed with benzine, is composed as follows

Solution of caoutchouc	50 gm
Benzine	50 gm
Lead carbonate	100 gm

The gloves after receiving four coats of this solution on their inner side, are sterilized by being placed for an hour in alcohol This does not alter the coating

MASKS FOR PROTECTION AGAINST ASPHYXIATING GASES

There are for sale numerous forms of apparatus for protection against asphyxiating gases which are offered to the public without any official control In the interests of the soldiers, the minister of war has decided that it shall be strictly forbidden for families to send such apparatus to soldiers and that the packages containing them shall be returned to the senders

BERLIN LETTER

Berlin, Oct 26, 1915

Feeding Prisoners of War

The feeding of the large number of prisoners of war has been the source of much worry for those in charge of military affairs The drill fields which it had been proposed to use for prison camps were being used by the volunteers Therefore many thousands of prisoners had to be sent to any available open field, which was hurriedly converted into a camp Tents and buildings were especially provided for shelter, and food of every sort was supplied, as well as primitive cooking facilities Contractors were found who were willing to feed the prisoners for 60 pfennige (15 cents) per day, exclusive of bread The authorities accepted this bid because their time and attention were taken up with other affairs Naturally, these contracting caterers were not aware of the particular demands that might be made by the many different nationalities found among these prisoners, hence, it is easily understood that, in spite of the efforts made by the German war authorities, complaints of every sort were made In the course of a few months these complaints became much louder and much more numerous, mainly, however, because the number of prisoners was increasing This led to a thorough investigation and a resulting regulation of the whole question

Professor Backhaus, referee for the "feeding of prisoners," appointed by the ministry of war, investigated the matter and published his results in the *Hamburgischen medizinischen Ueberschriften* His report shows clearly that the criticisms made were at variance Some maintained that the prisoners had not been fed enough, whereas others, equally insistent claimed that they were being fed too much, that food was being taken from the civil population as well as from the German troops and given to the prisoners, and that the public treasury was being depleted thereby It was also said that many of the contracting caterers were enjoying huge profits On the other hand, it must be admitted that in many prison camps no fault could be found with the care given the prisoners

After the number of prisoners had exceeded a million, that is, more than the full strength of the army in time of peace, the Prussian ministry of war, aided by the war ministers of Bavaria, Saxony and Wurtemberg, undertook to regulate the matter A normal feeding basis was laid down to take the place of the rules previously made, calling for sufficient nourishment or for three meals a day This normal feeding basis was made effective for all prison camps, for those supplied by contracting caterers as well as those looked after by the government itself In view of the fact that because of the war Germany was importing 28 per cent less albumin and 42 per cent less fat, a saving had to be made in these two food elements The total diet called for consisted of 2,700 calories, that is, 85 gm of albumin, 40 gm of fat and 475 gm of carbohydrates, the latter a quantity somewhat larger than that given as normal It will be noted that the total quantity as well as the nutritional value of this menu is somewhat lower than the normal physiologic requirements of an adult man engaged in light labor It was found, however, that this diet was sufficient for the prisoner after he had recuperated somewhat from the strenuosity of the campaign Such prisoners as were engaged in physical labor received a 10 per cent increase on this diet It was taken for granted that in no case could the work done be considered hard labor Such prisoners as were doing hard labor were receiving pay for it, and to them could be extended the privilege of enlarging on this diet by purchases made at the post store

Besides laying down this so-called normal diet or menu cognizance was taken of the fact that proper and suitable combinations of foods were required To encourage the scientific construction of a menu, and also for the purpose of controlling the proposed plan through a central authority, those in charge of the prison camps were required to submit regularly to the war ministry, for investigation and approval, menus for the succeeding month The first time such lists were submitted, many errors were discovered such as poor combinations of foods and improper division of the food elements for the various meals, unnecessary foods and tasteless combinations of foods Gradually these menus improved An investigation of 300 menus leads to the conclusion not only that the prisoner of war is being fed properly, but also that food is not being wasted Furthermore, it is shown by these menus that in spite of the high prices of food, the organization in charge of the feeding of these prisoners has been able to reduce the cost from 60 pfennige (15 cents) to 52 2 pfennige (13 5 cents) per day, exclusive of bread

In some prison camps the nationality and the individuality of the prisoners must be considered in constructing the menu Experience has shown that it is impossible to provide a menu that will please both the Russian and the Frenchman These "national" differences must be taken into consideration, and finally also whether the prisoner is well nourished or not, sick or well, working or idle, how he is housed and how he is clothed The humanitarian and the economic aspect of this matter also had to be considered Two things had to be kept in mind first of all, to conserve such foods of which there was a shortage in Germany or which were needed for the troops or the civil population and therefore had to be diverted first to these channels, and second, to keep the cost within certain limits It was found that it was cheaper and better for the government to feed these prisoners than to deal with contractors Therefore, all contracts were abrogated The principal difficulty was to secure the right people to place in charge of this work To meet this exigency, two courses, each of a week's duration, were given in Frankfort-on-the-Oder and Darmstadt for kitchen subalterns, and during the week of June 22-25, a course was given in Berlin for commissary stewards The lectures delivered during these courses and the description of excursions made were published, constituting a comprehensive review of the subject of the feeding of prisoners As stated above, it was necessary to consider what kinds of foods were available and the prices at which they could be obtained This, naturally, excluded many foods Of much greater importance than variety was the nutritional value of these foods Investigation brought to light many curious conditions It was thought that there was a scarcity of foods because the prices had been increased Investigation showed, however, that enormous quantities of several foods were being kept off the market by speculators who were endeavoring to raise the prices These deposits of food were attached by the authorities and placed on the market at normal prices This also had its influence on other food substances The dealers sold food in large quantities at prices which, though lower than before, still gave them a good profit

The smaller, more isolated prison camps also made complaint at this time because of the difficulty of securing certain raw materials The war ministry was compelled to establish a central market or depot where the most important staple foods for the use of these prison camps could be housed Although only a short time has elapsed since these depots were established, it can be stated that the German Empire is saving 100 000 marks ($25,000) daily because it is able to supply the necessary food substances at from 15 to 20 per cent less than formerly At the same time the quality of these foods is under absolute control and only suitable foods are distributed

Marriages

Abram Lee Van Meter, M D, Roxbury, Boston, to Miss Elva Von MacFarlin of Parsons Kan, at Brookline, Mass November 10

John Christopher Woodland, M D, Jessups, Md, to Miss Margaret Stewart Owings, at Sparrows Point, Md, November 17

' Knox Emerson Miller M D, Washington, D C., to Miss Novie Bliss Miller of Berksville Ky, October 29

Marvin Spears White, M D, Hamilton, Ala., to Miss Annie Mae Long of Tupelo, Miss., November 22

Charles William Henney M D., to Miss Margaret Elizabeth Tirney both of Portage Wis October [illegible]

Herbert Handy Howard, M D, to Miss Ruby G White, both of Somerville Boston November 10

James Weir Robinson M D to Miss Mary Herbert Howe, both of Philadelphia, November 20

Deaths

Hon Walter Humphries Montague, M D University of Victoria College Cobourg Ont 1882 L.R C.P Edinburgh, 1882, aged 56, for several years a practitioner at Dunville, Ont, for fifteen years a member of the Canadian Parliament from Ontario, a member of the Privy Council without portfolio in 1894 and a year later minister of agriculture who removed to Winnipeg Manitoba, in 1908 and there became a member of the Executive Council of the Province and later minister of public works died in his apartments in the Royal Alexandra Hotel Winnipeg from cerebral hemorrhage November 13

Thomas Ayars Jones, M D New York University New York City, 1880, aged 65, a Fellow of the American Medical Association and president of the Luzerne County Medical Society in 1885, local surgeon at Ashley, Pa for the Central Railroad of New Jersey Wilkes-Barre-Wyoming Valley Traction Company and Lehigh and Wilkes-Barre Coal Company, one of the best-known practitioners of the Wyoming Valley died at his home in Ashley, November 10, from heart disease

Oswald Wayne Smith, M D Washington University St Louis 1902, aged 39, formerly superintendent of the Washington University Hospital and Dispensary and the O'Fallon Dispensary and assistant registrar of his alma mater, later superintendent of the St. Louis City Hospital and then called to the superintendency of Harper Hospital, Detroit, an acknowledged expert on hospital management, died at his home in Detroit, November 12, from cerebral hemorrhage

Charles Granville Stone, M D University of Maryland Baltimore, 1872 aged 69, a member of the Medical Association of the District of Columbia, formerly a dentist, from 1896 to 1908 chief surgeon of the Washington Railway and Electric Company, surgeon to the Baltimore and Ohio Railway Company Relief Association and a director of the Casualty Hospital died in his apartment in Washington, November 11 from the effects of a nervous breakdown

Grace Wolcott, M D Women's Medical College of Pennsylvania Philadelphia 1884, aged 57, a Fellow of the American Medical Association and a member of the council of the Massachusetts Medical Society, consulting physician to the Trinity Dispensary and one of the founders and senior physician to the Vincent Memorial Hospital Boston who established an occupational camp for nervous patients at Heath, Mass, died in that place, November 9

Samuel Garland Slaughter M D New York University New York City 1883 aged 54, a member of the Medical Society of Virginia physician and surgeon to the Marshall Lodge Home and Retreat, Lynchburg Va surgeon of the Lynchburg Home Guard and assistant surgeon to the Norfolk and Western Railroad died at his home in Lynchburg November 17, from the effects of Roentgen-ray burns received several years before

Francis L Galt, M D University of Pennsylvania Philadelphia 1854, aged 83 assistant surgeon in the United States Navy and later surgeon in the Confederate Navy during the Civil War and on duty on the the cruiser *Alabama*, a member of the party headed by Admiral Tucker which first explored the headwaters of the Amazon River for the Peruvian Government, died at his home, Woodside, near Upperville, Va, November 17

Rush Wilmot Kimball, M D Long Island College Hospital Brooklyn 1890, aged 53, a Fellow of the American Medical Association visiting physician to the W W Backus Hospital Norwich, Conn, and physician to the Rock Nook Children's Home one of the most prominent physicians of Eastern Connecticut, medical examiner of New London County, died at his home in Norwich, November 15, from angina pectoris

Tiffin J Shackleford, M D College of Physicians and Surgeons Baltimore 1882 aged 60, a Fellow of the American Medical Association, president of the Indiana Thirteenth District Medical Association in 1913 and formerly president of the Kosciusko County Medical Society, formerly health commissioner of Warsaw Ind, and Kosciusko County, died at his home in Warsaw, November 17, from cerebral hemorrhage

William Virgil Newsom, M D College of Physicians and Surgeons Baltimore 1887, aged 67, a member of the Florida Medical Association and for several years president of the Marion County Medical Association local surgeon at Ocala Fla, for the Seaboard Air Line Railway, visiting physician and director of the Marion County Hospital, died at his home in Ocala November 11

Robert Emmett Austin, M D Missouri Medical College St Louis 1897, aged 43, a Fellow of the American Medical Association surgeon of the Tenth U S Cavalry during the Spanish-American War with service in Cuba, for nine years a resident and roentgenologist of San Diego and once president of the City Board of Health, died at his home November 13 from septicemia

Richard Harrington Ashby, M D Cooper Medical College, San Francisco 1886, aged 54, formerly a Fellow of the American Medical Association and a surgeon in the British Service a member of the Medical Society of the State of California, died at his home in Roseville, Calif, November 16 from heart disease

Robert Harold Mitchell, M D University of Pennsylvania Philadelphia 1898 aged 41 a Fellow of the American Medical Association and a member of the gynecologic staff of the Lucy Brinkley Hospital Memphis, Tenn, surgeon to the Juvenile Court and visiting physician to the Home for Incurables, died at his home in Memphis, November 14 from heart disease.

Katherine McIlheny Kollock, M D Women's Medical College of Pennsylvania Philadelphia, 1887, aged 70 a Fellow of the American Medical Association, at whose suggestion the Philadelphia Board of Education instituted the present system of medical inspection of students in the High School for Girls in 1893, for thirteen years supervisor of inspection in that school, died at her home in Philadelphia, November 17

Jasper Moss Wells, M D Eclectic Medical Institute, Cincinnati 1877, aged 69, formerly a member of the Kentucky State Medical Association, for many years county clerk of Lewis County, Ky and for thirty-seven years a practitioner of Vanceburg Ky, died at his home in Vanceburg October 27, from intestinal obstruction

Major Albert Veeder, M D University of Buffalo, N Y, 1883, aged 67, a member of the Medical Society of the State of New York and said to have been the first to demonstrate the transmission of typhoid fever by the fly, a veteran of the Spanish-American War, died at his home in Lyons, N Y November 16

Valentine Browne, M D New York University, New York City 1875 aged 83 formerly a Fellow of the American Medical Association a member of the Medical Society of the State of New York, consulting physician to St. Joseph's Hospital, died at his home in Yonkers, N Y, November 19, from angina pectoris

James Madison Wood, M D Columbus (Ohio) Medical College, 1879, aged 62 a member of the Ohio State Medical Association for many years a druggist and postmaster of Larue and later a practitioner of Hepburn Ohio, died at his home near Hepburn, November 11, from carcinoma of the stomach

John William Morris, M D Memphis Hospital Medical College Memphis Tenn, 1902, aged 39, a member of the Oklahoma State Medical Association and vice president of the Sequoyah County Medical Society, died at his home in Sallisaw Okla., September 30 from lobar pneumonia

William Edward Warner, M D Western Reserve University, Cleveland, Ohio, 1881, aged 58, a Fellow of the American Medical Association, formerly of Aberdeen, S D, a member of the Board of Health and quarantine physician of Spanish Fork, Utah, died at his home in that place, November 20

W H H Woland (license, Ohio, 1896), aged 74, for forty-four years a practitioner of Sandusky County, Ohio, for twenty years in practice at Lindsey, and for the same length of time at Fremont Ohio, died at his home in the latter city, November 17, from cerebral hemorrhage

Anna Groff Smith, M D University of Michigan, Ann Arbor 1892, aged 54 a Fellow of the American Medical Association, for twenty-three years a practitioner of the East Side, Toledo, Ohio, died in Flower Hospital, Toledo, November 15, two days after a surgical operation

Marion Elizabeth Blackman, M D University of Michigan, Ann Arbor, 1909, aged 37, a member of the Medical Society of the State of New York, and a member of the staff of the Rochester, N Y, State Hospital, died in Buffalo, September 3, from interstitial nephritis

Thomas A Wasson, M D Homeopathic Hospital College, Cleveland, 1886, aged 61, a member of the Medical Society of the State of New York, and health officer for the township and village of Elizabethtown, N Y, died at his home in Elizabethtown, November 12, from endocarditis

William Henry Shields, M D New York Homeopathic Medical College, New York City, 1910, aged 41, a practitioner of Astoria, L I, up to three weeks before his death when he moved to Ogdensburg, N Y, died at his home in that city, October 24, from heart disease

Samuel Newell Hamilton, M D Indiana Medical College, Indianapolis, 1875, aged 70, a Fellow of the American Medical Association, a veteran of the Civil War, once coroner of Fayette County, Ind, died at his home in Connersville, Ind, November 18, from heart disease

Uriah Campbell Jones, M D Drake University, Des Moines, Iowa, 1885, a member of the Iowa State Medical Society, aged 72, a veteran of the Civil War, a well-known practitioner and druggist of Breda, Iowa, died at his home in Breda, November 5, from carcinoma

Terrell L Fuller, M D Eclectic Medical Institute Cincinnati, 1911, aged 27, formerly of Mayfield, Ky, but later on duty in a government hospital at Oroyo, Peru, South America, died in that place, November 3

Willis W Brown, M D Memphis Hospital Medical College, Memphis, Tenn, 1891, a member of the Oklahoma State Medical Association, died at his home in Cameron, Okla, about November 5, from pneumonia

John A Reese, M D Medico-Chirurgical College of Philadelphia, 1883, aged 65, of Philadelphia, was struck by an automobile while crossing a street, November 11, and died at his home from his injuries

Emmett Daniel Boaz, M D University of Virginia, Charlottesville, 1877, New York University, New York City, 1878, aged 60, of Covesville, Va, died suddenly, November 8, while driving near Covesville.

John Morgan, M D College of Physicians and Surgeons Keokuk, Iowa, 1867, aged more than 70, for more than half a century a resident of Neosho Falls, Kan, died in Spokane, Wash, about November 6

Maximilian Broening M D New York University, New York City, 1868, aged 75, formerly secretary of the Clinton County (Ill) Medical Society, died at his home in Carlyle, Ill, November 3

John R Papin, M D Missouri College, St Louis, 1878, aged 58, for many years a practitioner of St Louis, died in St John's Hospital, St. Louis, November 11, from rheumatism

George W Delo, aged 91, for many years a practitioner of Missouri, but who retired more than forty years ago, died at his home in Springfield, Mo, October 25, from senile debility

John H Hammond, M D Hahnemann Medical College, Chicago, 1887, aged 55, died at his home in Anderson, Ind, November 12, from cerebral hemorrhage

James Marshall Lewis, M D Vanderbilt University, Nashville, Tenn, 1887, aged 51, of Birmingham, Ala, died in an infirmary in that city, November 6

Harvey J Ault (license, Arkansas, 1903), aged 58, died at his home in Pinnacle, Ark, about November 1

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

PROPRIETARY DIGITALIS PREPARATIONS

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following expression of its views W A PUCKNER, Secretary

It is becoming increasingly apparent that the tincture of digitalis produces the full therapeutic effects of digitalis, and that when it is properly made it is as stable as any liquid preparation of digitalis now available, and that the tincture has the systemic side actions of digitalis, including the emetic, in no greater degree than the various proprietary preparations of this drug to be found on the market.

While in itself the market price of a valuable therapeutic agent is of comparatively little moment, the fact remains that the high price at which many of the proprietary preparations of digitalis are sold — often 100 times that of an equivalent amount of the drug — serves as a constant stimulus to the exploitation of these with extravagant claims, and it is commonly sought to enhance their reputation by exaggerating the disadvantages of the official drug and its preparations

The Council especially emphasizes the fact that this statement is not intended to lessen the efforts that are being made to find new and better preparations of digitalis, its protest is against the deliberate misrepresentations of those manufacturers who seek to magnify the difficulties in the use of digitalis, by therapeutic exaggeration on the one hand, and by an exaggeration of the side actions of digitalis and the instability of its preparations on the other

Strophanthin and crystalline ouabain are now available in sterile solution in ampules, and afford a convenient means of promptly securing the cardiac action by intramuscular or intravenous injection

DR PIERCE'S PLEASANT PELLETS

"Dr Pierce's Pleasant Pellets" are made by the World's Dispensary Medical Association, Buffalo, the same concern that exploits "Pierce's Golden Medical Discovery," "Pierce's Favorite Prescription," "Pierce's Compound Extract of Smartweed," etc The Pierce nostrums are advertised under the shibboleth, common to the "patent medicine" maker, that their products contain only vegetable ingredients Pierce's *Pleasant Pellets are recommended* to the public on the claim that

> 'Being entirely vegetable in composition, these pellets operate without disturbance to the system, diet or occupation'

Elsewhere in the same advertising leaflet the public is warned against "harsh drastic pills, composed, as *most of* them are, of jalap, aloes, scammony, croton oil, gamboge and elaterium"—all of them, it should be noted, products of the vegetable kingdom Some day, possibly, the public will learn that some of the most deadly poisons known to science are "purely vegetable", when that time comes the "patent medicine" makers will probably discard the "vegetable" talking point!

No longer is the direct claim made—at least in the trade package, which is subject to federal regulation—that "Dr Pierce's Pleasant Pellets Cure Constipation" In common with a great deal of the "patent medicine" advertising of today, the direct falsehood of the former Pierce claims has given place to the inferential falsehood The advertising of one Pierce nostrum is used for the purpose of exploiting another Thus the leaflet that accompanies the trade package of Pierce's Pleasant Pellets recommends the "pellets" for "suppressed menstruation"—from "taking cold"—coupled with the use of a hot sitz bath—and a 'full dose of Dr

Pierce's Compound Extract of Smartweed" The Smartweed nostrum by the way, according to labels in our files, contains in addition to 40 per cent alcohol, eight tenths of a grain of opium to the fluid ounce The 'Pleasant Pellets" are also recommended in 'very obstinate cases of Tetter, Salt-Rheum, Erysipelas Eczema Boils Carbuncles Scrofula, and Eruptions caused by Infectious Blood Poisons"—in connection with 'Golden Medical Discovery "

Pierce's Pleasant Purgative Pellets" were examined in the Association's laboratory and while no exhaustive work was done, the chemists reported

> After removal of the coating the inner pill responded to tests for emodin and aloin Alkaloids, mercury or phenolphthalein were not found Whether or not other emodin-bearing drugs besides aloin were present was not determined Essentially Pierce's Pleasant Purgative Pellets appear to be an ordinary laxative pill

That the active principle of aloes was found in the pills is of interest in view of the fact already referred to that the leaflet advertising Pierce's Pleasant Pellets warns the public against the use of purgatives composed of aloes

Correspondence

The Case of the Bollinger Baby

To the Editor —As Commissioner of Health of the City of Chicago I gave testimony before the coroner's jury on the subject of the right of the Bollinger baby to live

I fear that some of the published expressions have been hastily uttered and not as the result of mature judgment All of those who have expressed themselves have been laboring under the impression that this baby was so mentally and physically defective that were it given an opportunity to live it would become a charge on its parents and later, perhaps on the community, and those who spoke favoring the judgment of Dr Haiselden believed that on account of the alleged mental and physical defects it had forfeited its right to live

When I visited the German-American Hospital eight hours before this baby died and made an examination of it and viewed the Roentgen-ray pictures I was startled to observe that this was not the defective baby that I had expected to see At that time the baby was dying as the result of intestinal obstruction

The defects were an imperforate anus a deficiency in the skin around the shoulder and neck and the absence of the right external ear The right kidney was fused with the left and connected with the bladder by one ureter (The bladder was full of urine which was easily expressed through the urethra) There was also absence of the coccyx There was nothing to indicate that this child would have been mentally defective except that which would come from the absence of the sense of hearing on the right side

The defect that caused the death of the child was an imperforate anus the rectum extending down to within one-half inch of the outside The making of an artificial opening was the 'simple operation' which was spoken of so frequently in the press which might have saved the baby's life In this connection I desire to state that this operation is not quite so simple as people have been led to believe and the results are not always satisfactory

These being the facts in this particular case a question of tremendous importance is at once raised as to whether the right of any child to live should rest wholly on the judgment of any physician I do not want to be understood as questioning the right of any physician to act as his conscience or judgment in any particular case would dictate, and to operate or not operate in accordance therewith

But at the same time the life of every child should be so safeguarded by the community that it would not have to depend on the judgment of any one physician

If we are going to depart from the recognized duty of the physician to save life regardless of what that life shall be afterward then the state must provide some tribunal similar to that of ancient Sparta which questioned the right of every child to live until it had been passed on by such a tribunal Were this case to be made a precedent for future action by the physicians of our land it might lead to the loss of many valuable lives

Ages long will tell the story old
Of triumphs wrought unending
By humans and things once held as naught.

Then, again, we must remember that it would open up the way to criminal neglect I do not believe that anybody will argue that a human life is comparable with that of the lower animals and while I favor eugenics so far as it tends toward the betterment of the race no human life should ever be considered on the same basis as that of the lower animals

The command Thou shalt not kill," either by the sins of omission or commission, is embodied in our statutes as well as in our religion and should never be abandoned as a fundamental principle on which to stand And while it is true that mental and physical defectives have been a burden on society and will continue to be such, who can say that the love and care bestowed on these defectives have not enriched the minds and hearts of those who have worked with and for these unfortunates, so that in the end the world is repaid for all the trouble they have caused us?

The civic conscience of a community is an indication of the height to which its civilization has attained, and this is nowhere more manifest than in the way in which it cares for its mental and physical defectives

The safeguards of human life must not be torn down, they have been none too strong in the past, and the case under discussion should not be used to make them any weaker

John Dill Robertson, M D, Chicago

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted on request

POISONING FROM PRESERVED CORN

To the Editor —On a recent morning a woman who was enjoying at least fair health opened some preserved corn The package was one of three jars of the ordinary Mason type The first and second jars were evidently bad and were discarded at once The woman tasted of the third jar which appeared to be a good one It was after tasting the second or third mouthful that she decided it was no good She did not put it on the table and forbade any one else in the family to taste it The contents of the three jars were thrown to the chickens of which forty out of forty two died after eating the corn On the afternoon of the same day the woman complained of slight headache The next day she took a laxative pill and another pill was taken at night She had some diarrhea and the next morning felt a tightening at her throat This continued and acted like a paralysis up to the time of her death The bowel distress was not marked at any time She seemed to have complete gastro intestinal paralysis at the time of death

What was the cause of death? Is there any literature bearing on this point? In what way did the corn or what elements in the corn—good or bad—could have caused her death?

Leon W Hyde M D Hillsboro Ore.

Answer.—Assuming that the corn in question was free from poison introduced from without such as metallic and other poisons there is only *one* reasonable explanation of the occurrence related in this instance namely, that it concerns an instance of food poisoning from canned corn, the poisons having been produced by micro-organisms in the corn It is possible also that the organisms in the corn may have been infectious for human beings and animals In the chapter on food poisoning (Modern Medicine, Ed 1, 1907, i, 223) Novy points out that the same micro-organisms that cause meat to be poisonous may produce exactly the same effects when they are introduced into vegetable food He describes the poisoning of twenty-one persons who ate of bean salad, eleven of these persons died The beans when opened had a peculiar odor, but showed no marked decomposition The symptoms came on from twenty-four to thirty-six hours after eating Novy also cites the instance of poisoning from oatmeal described by Ohlmacher There have recently been reported several epidemics of botulism from eating home-canned beans, home-canned pears and home-canned apricots This subject has recently been discussed by Dickson (Botulism an Experimental Study, The Journal, Aug 7, 1915, p 492) The symptoms described by Dr Hyde in this case suggest botulism They are not of such a character, however, as to allow a specific deduction as to the particular form of poisoning that took place The fact that so many chickens died and that the one human being who ate of the corn also died points directly to the corn as the source of the fatal agent, but, of course, the exact nature of the agent could not be determined without bacteriologic and other examinations

NOSE IONS

To the Editor —The enclosed circular regarding 'Nose Ions" is one of many Have you any data regarding it? Claims are extraordinary

P M Foshay, M D, Montclair, N J

To the Editor —I should be glad of some information about the claims made by the Nose Ions Company, New York

David W Wells, M D, Boston

Answer —These notes of inquiry were referred to the Association laboratory for a reply In answer the laboratory reported

Nose-Ions circular matter referred to is a crude attempt to impose on a scientifically trained profession with pseudoscientific patter about ions, ionic dissociation and the positive and negative charges of ions The only intimation regarding the composition of Nose-Ions is found in a small circular wrapped around a sample package Here it is stated that 'Nose-Ions is composed of chemically pure Na-ions of sodium chloride, Campnor and Menthol, combined with the base, Vaseline'

'Were the matter deserving of scientific consideration it would be interesting to inquire just how the positive sodium ion was separated from the negative chlorin ion of sodium chlorid, and how the sodium ion was kept in the ionized condition while isolated But since every positive *ion exists, as such, only along with a companion negative* ion, such inquiry is superfluous

"A qualitative examination was made From this examination it appears that Nose-Ions is essentially an ointment consisting of a petrolatum base containing some odorous principles such as camphor, menthol and eucalyptus with some salicylic acid, and some quinin, probably in the form of sulphate 'Sodium ions,' if present at all, are present in traces only"

CHRISTIAN SCIENTISTS AND DEATH CERTIFICATES

To the Editor —Please publish the names of the states in which Christian Science practitioners are authorized by law to sign death certificates

J W R

Answer —There is no state in which Christian Scientists are specifically authorized to sign death certificates In a few states the law may, by implication, authorize this indirectly For example, in Maryland, Christian Scientists are regarded as practicing medicine when treating for pay, and hence would be considered as physicians and as authorized to sign death certificates as such See *Bandel* v *Health Department*, 193 N Y 133, 85 N E 1067 The amendment to the Ohio medical practice act for 1915 included Christian Scientists, but they are regarded as limited practitioners and not physicians They could not be permitted to sign death certificates under this construction Most states specifically exempt Christian Scientists from the application of the medical practice act In these states, Christian Scientists could not sign death certificates

DIPHTHERIA AND THE BURNING OF LEAVES

To the Editor —The idea is prevalent in this and some surrounding towns that the burning of leaves in the fall is responsible for outbreaks of diphtheria A few physicians are making the same claim The assertion seems absurd to me Is there any foundation for it?

W H Henry, M D, Hamden, Ohio

Answer —There appears to be an old superstition to the effect that the burning of leaves in the fall causes diphtheria This superstition is probably based on the rise in the diphtheria morbidity which occurs during the fall season The only basis for this belief would be an increased irritation in the throat which might appear coincident with the inhalation of the pungent smoke Of course, to ascribe a direct etiology to burning leaves in diphtheria is absurd

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama Montgomery, Jan 11, 1916 Sec, Dr W H Sanders Montgomery

Alaska Juneau, *Jan 4, 1916* Sec, Dr Harry C. DeVighne, Juneau

Arizona Phoenix, Jan 4 5, 1916 Sec, Dr John Wix Thomas National Bank of Arizona Bldg Phoenix

California Los Angeles, December 14, and Sacramento, Jan 11, 1916 Sec, Dr Charles B Pinkham, Room 527 Forum Bldg, Sacramento

Colorado Denver, Jan 4, 1916 Sec., Dr David A Strickler, 612 Empire Bldg, Denver

Delaware *Dover and Wilmington, December 14* Sec, Dr H W *Briggs, 1026* Jackson St, Wilmington

District of Columbia *Washington, Jan 10, 1916* Sec, Dr Edgar P Copeland, The Rockingham, Washington

Florida Jacksonville, December 7-8 Sec, Dr E W Warren 102 Front St., Palatka

Indiana Indianapolis, Jan 10, 1916 Sec, Dr W T Gott 84 State House, *Indianapolis*

Kentucky Louisville, December 7 9 Sec, Dr A T McCormack Bowling Green

Maryland Regular Baltimore, December 14 Sec, Dr J McP Scott, Hagerstown Homeopathic, Baltimore, December 15 16 Sec, Dr O N Duvall, 1817 N Fulton Ave, Baltimore

Minnesota Minneapolis, Jan 4 7, 1916 Sec, Dr Thomas S McDavitt, 814 Lowry Bldg, St Paul

Missouri St Louis, December 13 15 Sec, Dr J A B Adcock State House, *Jefferson* City

New Hampshire Concord, December 20 21 Sec, Dr W T Crosby, The Beacon, Manchester

North Dakota Grand Forks, Jan 4 7, 1916, Sec, Dr G M Williamson, *Grand Forks*

Ohio Columbus, December 7 9 Sec, Dr George H Matson, Columbus

Oklahoma Oklahoma City, Jan 11 12, 1916 Sec, Dr R V Smith, 502 Daniel Bldg Tulsa

Oregon Portland, Jan 4, 1916 Sec, Dr L H Hamilton Medical Bldg Portland

Rhode Island *Providence, Jan 6-7 1916* Sec, *Dr* Gardner T Swarts, Providence

South Dakota Pierre, Jan *11, 1916* Sec, Dr P B Jenkins, Waubay

Utah Salt *Lake City, Jan 3, 1916* Sec Dr G F *Harding 407* Templeton Bldg, Salt Lake City

Virginia Richmond December 14 17 Sec Dr J N Barney Fredericksburg

Washington Walla Walla, Jan *4, 1916* Sec., C N Suttner, Baker Bldg, Walla Walla

Wisconsin Madison, Jan. 11, 1916 Sec, Dr J M Dodd, 220 E Second St, Ashland

Idaho October Report

Dr Charles A Dettman, secretary of the Idaho State Board of Medical Examiners, reports the practical and written examination *held at Wallace, Oct 5-7, 1915* The total number of subjects examined in was 11, total number of questions asked, 110, percentage required to pass, 75 The total number of candidates examined was 7, all of whom passed Two candidates were licensed through reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent.
Kansas Medical College, Topeka		(1913)	83
Tufts College Medical School		(1907)	80
Columbia University College of Phys and Surgs		(1905)	88
Cleveland College of Physicians and Surgeons		(1898)	82
Medical College of Ohio		(1893)	75
University of Pennsylvania		(1914)	91
University of Virginia		(1897)	84

College	LICENSED THROUGH RECIPROCITY	Year Grad	Reciprocity with
Gross Medical College		(1902)	Utah
Jefferson Medical College		(1914)	Utah

Vermont July Report

Dr W Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Burlington, July 1-3, 1915 The total number of subjects examined in was 12, total number of *questions asked* 90, percentage required to pass, 75 The total number of candidates examined was 27, all of whom passed The following colleges were represented

College	PASSED	Year Grad	Per Cent.
Harvard University		(1915)	86 1
Temple University		(1915)	87 2
University of Vermont		(1894) 85 2 (1904) 91 7, (1915)	76 2 77 7 77 7 82 3, 82 9, 83 7, 84 4, 84 4, 84 6 84 8, 84 8, 85 85 8, 86 1, 86 4 86 6 86 9, 87, 87 1 87 2, 87 9, 88 8, 90 5

Book Notices

The Gold-Headed Cane By William Macmichael, M D With an Introduction by Sir William Osler, B A, M D, F R C S and a Preface by Francis R Packard M D Cloth Price, $3 net Pp 261, with 21 illustrations. New York Paul B Hoeber, 1915

The coming of the holiday season is marked by the publication of a number of books especially prepared to serve as gifts or remembrances for physicians The history of medicine and the biographies of great physicians are becoming of increasing interest to the medical profession Among such is that delightful biographical phantasy The Gold-Headed Cane" It is an autobiography supposedly written by a gold headed cane carried successively by Radcliffe, Mead, Askew, Pitcairn and Baillie, and presented by Dr Baillie's widow to Sir Henry Halford who in turn presented it to the College of Physicians of London An introduction to the present issue of the book written by Sir William Osler calls attention to the fact that this year marks the two hundredth anniversary of the death of Radcliffe, and gives a short appreciation of the biographies contained in the book The note by Dr Packard is a short history of the book and its author This edition has been prepared in a decorative binding and follows the style and illustrations of the second edition

Ophthalmoscopic Diagnosis for General Practitioners and Students By George W Jean A B M D Instructor in Ophthalmology in the School of Ophthalmology of the New York Eye and Ear Infirmary Cloth Price $1 Pp 123, with 68 illustrations New York E B Meyerowitz, 1915

The methods of ophthalmoscopic examination and the various pathologic appearances of the fundus are briefly described and profusely illustrated in this book So far as black and white wood cuts can be of value those used are as good as any found in the average textbook, but any attempts to illustrate the fundus of the eye unless reproduced in the natural colors are apt to be misleading The beginner, for whom this book is particularly interesting, is liable to receive wrong impressions if he depends too much on the illustrations For example the illustration of retinal hemorrhages might be mistaken for deposits of black pigment or even for retinitis pigmentosa the illustration of glioma gives absolutely no clue to the striking appearance seen in this condition and the difference between the clear-cut white spots of an old choroiditis and the yellowish-white appearance of recent exudates is not clearly defined The pathology and treatment of certain conditions are merely mentioned

Obstetrics Edited by Joseph B DeLee A M M D Professor of Obstetrics Northwestern University Medical School with the Collaboration of Herbert M Stowe M D Practical Medicine Series. Cloth Price $1 25 Pp 230 with illustrations Chicago Year Book Publishers 1915

The volume on obstetrics is one of the best representatives of this useful series which gives a résume of a year s progress in medicine The editors of this volume evidently spent considerable time in the selection of abstracts and in their consideration Practically every page contains a few notes from the editors calling attention to fallacies or important points in the various articles which are considered The following is an example of the practical nature of these comments It refers to Abderhalden s test in the diagnosis of pregnancy

> From this maze of opinions what are we to decide? I believe that like other blood serum tests Abderhalden s has only relative value—though this particular one is very high It requires very careful laboratory technique and many precautions or the result is open to question In deciding in a given case it would be a little risky to attach absolute certainty to it, yet it is very valuable in the differential diagnosis.

Of particular interest are the sections devoted to puerperal sepsis and twilight sleep '

Exercise in Nervous Disorders—As a prophylactic against nervous disorders the value of exercise can hardly be overestimated Brain workers are better for moderate exercise, but do not need much and after 25 severe intellectual work can rarely be done by persons in athletic training—Dana

Medicolegal

Requirements in Attending Childbirths—Regular Physicians as Witnesses Against Others—Nonexpert Evidence as to Treatment

(Ward vs Gibbons (Kan), 149 Pac R 422)

The Supreme Court of Kansas affirms a judgment for $2 418 damages in this action for malpractice in the treatment of the plaintiff in a case of childbirth The court holds that the petition in which the plaintiff alleged, in substance, that the defendant was employed as a physician to care for her in her confinement, and that he negligently produced a premature delivery, causing a laceration and also failed to advise her of her condition and to carefully and skilfully treat her after the birth of her child, by all of which she was severely injured stated a single cause of action It was not necessary to treat the negligence of the defendant before and after the birth of the child as separate causes of action, any more than to have treated his neglect at each call or visit as separate causes of action There was a single employment and any failure to treat the plaintiff with due skill and care during that period, whether before or after the birth of the child, afforded but one cause of action A physician employed in an obstetric case is required to care for and aid the patient not only during her confinement and the delivery of the child but it is his duty to make a careful examination of the patient and give reasonable and proper attention to any lacerations or injuries resulting from the delivery, and if he fails in this respect or to inform the patient or those caring for her as to her condition or to give them instructions so that they may act intelligently in the further care and treatment of the patient he is guilty of negligence and liable for the resulting injuries

Nor does the court think that because the defendant was an osteopath there was any error in physicians of the regular school having been permitted to testify as to the progress and condition of labor in an obstetric case the methods of delivery and the proper treatment of the mother after the birth of the child It is true that, where a physician or surgeon is charged with malpractice, his treatment and advice are to be tested by the standards of the school to which he belongs But where there is practical uniformity in the rules of practice and treatment, regular practitioners of any school are competent witnesses as to the proper diagnosis and treatment of a given case or where a person who holds himself out as a medical expert or healer has no fixed rules of practice he is still bound to treat patients with ordinary and reasonable skill and care and competent physicians, regularly engaged in practice, are competent witnesses as to whether the treatment administered in the case was properly or negligently performed

Ordinarily only physicians and surgeons of skill and experience are competent to testify as to whether a patient has been treated or an operation performed with a reasonable degree of skill and care but testimony as to many matters connected with the treatment of a patient, such as the statements of the physician or surgeon, as well as the external appearances and manifest conditions which are observable by any one, may be given by nonexpert witnesses However, the mere fact that the witness who was the plaintiff's mother, spoke to the defendant about attending her daughter, or performed some other friendly act in that regard, would not make her subsequent statements competent against the plaintiff for whom the service was performed

An instruction is approved which told the jury among other things that the defendant could not be heard to charge the plaintiff with contributory negligence in not having proper attention given to her injuries if the jury believed from the evidence that, by the exercise of reasonable diligence he could and should have informed himself of the nature and extent of her injuries, and that he negligently left her in ignorance of their extent or seriousness, or he led her to believe a surgical operation unnecessary

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Chicago, Dec. 27-29.
American Physiological Society, Boston, Dec. 27-30.
Society of American Bacteriologists, Urbana, Ill., Dec. 28-30.
Southern Surgical and Gynecological Association, Cincinnati, Dec. 14-16.
Western Surgical Association, Des Moines, Iowa, Dec. 17-18.

NATIONAL ASSOCIATION FOR THE STUDY OF PELLAGRA

Third Triennial Meeting, held at Columbia, S. C., Oct. 21-22, 1915

The President, C. H. Lavinder, in the Chair

The Prevalence of Pellagra: Its Possible Relation to the Rise in the Cost of Food

Mr. Edgar Sydenstricker, Washington, D. C.: Published in *Public Health Reports*, Oct. 22, 1915, p. 3132, and commented on in "Studies of Pellagra," editorial, The Journal, Nov. 20, 1915, p. 1818.

DISCUSSION

Dr. J. F. Siler, Washington, D. C.: The speaker has emphasized the fact that the income of cotton mill families in the South is 20 per cent. lower than that of families in New England mills: $820 per annum in the South, against $1,000 in New England. If analyzed, this difference is, to a great degree, apparent rather than real. When the winters of South Carolina are contrasted with those of New England, we can realize that an appreciable proportion of the 20 per cent. difference in annual income must be expended for coal and extra clothing. Living conditions are in other respects quite different. The monthly rental for tenements amounts only to from $1.50 to $3 in the South. In a few mills investigated by us in the South there were no rental charges for tenements. Rents in the New England mill districts are much higher. In the South frequently street car fares do not enter into the problem. The open season is much longer than in New England, and a large proportion of families have gardens from which vegetables are grown which are available from May to late fall. These factors should be considered before we attempt to draw any sweeping conclusions relative to differences in the wage scale. It is my belief that the cotton mill operative in the South is, after all, in about as good condition economically as the New England operative. Bureau of Labor statistics showed that for the five-year period 1907-1912, the wage rate for mill workers had increased only 5 per cent. In the Spartanburg district our investigations show that the average increase between 1900 and 1914 must have been about 50 per cent. In March, 1904, in one mill the average daily wage of spinners in one room was 37 cents. February, 1911, the average daily wage in this room had increased to 86 cents per day. In September, 1914, the average daily wage in the spinning room had again increased from 86 to 99 cents. These figures show that the average daily wage in 1914 was almost three times that in 1904. The productive capacity had doubled in the ten-year period, and the rate of pay had increased, while the working hours had decreased from eleven to ten per day. The wage for day labor was about 75 cents in 1900, while in 1914 it had advanced to from $1.10 to $1.20. Most operatives, however, are "piece" workers, and averaged in 1914 between $1.25 and $1.50, and some of the more efficient $2 and even $2.50 per day. In 1900, children were paid from 25 to 40 cents per day. In 1914, children from 12 to 14 years of age earned from 60 to 75 cents a day, and those from 14 to 16 usually earned from 90 cents to $1 a day. The trend in wages from 1900 to 1914 has been steadily upward. Whether or not the increase in wages has kept pace with the increase in food prices is open to argument. I feel that they get about as much for their money now as fifteen years ago. It was unusual with us to find a village in which less than 30 per cent. of the families owned their own milch cows, usually the proportion ranged from 40 to 60 per cent.

There is no doubt that the people in these villages have an excess of carbohydrates in their diet, and the amount of fresh meat consumed should be increased. Most of them are fond of hog products which enter quite extensively into their dietary during the hog killing season, December to March. Within the past six or eight years most of the company stores have added a meat market to their equipment. In some villages fresh meat is on sale daily, and in most of them daily from September to April. The income of a cotton mill family in the Spartanburg district ranges from $40 to $175 per month, the average being between $50 and $75. We were unable to convince ourselves that pellagra had any particular predilection for families with the minimum incomes, and we encountered it with about equal frequency in families with a monthly income of $50 and those of from $90 to $150.

Dr. George C. Mizell, Atlanta, Ga.: There was a time in the South when economic conditions were very much worse than now. In 1891 and 1892, a great many suffered from want of food, but the diet of Southern people is a great deal better today than ever before. Others besides the inhabitants of mill villages have pellagra. I practice and do much investigating in mill villages, and except for the fact that there are more people in very ordinary than in well-to-do circumstances, I cannot see any difference in the incidence of pellagra, so far as the money-earning power of the family is concerned. In the suburbs of Atlanta we have many mills of which the wages are very low. It is a fact that in recent years pellagra has greatly diminished in those villages, as Griffin, Ga., where there is a high-class mill, the people are paid well and are looked after from every standpoint, both morally and physically, and pellagra has not diminished there so far as I can determine by inquiry throughout the village, without taking complete figures. Cold storage and canned meats have undergone deterioration before they reach the consumer. They bring about a condition which I think plays a part in the production of pellagra. Mr. Sydenstricker states that there is a greater consumption of lard in the South than in the North, according to population. I do not believe these are facts. I should like to ask him when he says "lard" if he does not mean lard and lard substitutes.

Mr. Edgar Sydenstricker, Washington, D. C.: The statistics which I used are based on several actual investigations, not of the rural population, but of workingmen's families in the South and in other sections of the country. These investigations were made in 1901 and 1909, and also in 1907 and 1908. They cover generally the Southern states, and they cannot account for any specific variation in any particular locality. By "lard" is meant the amount of lard used in the workingman's family during the year, whether used in cooking or for any other purpose. The same is true of meats and everything else included in the list of articles of food, so far as accurate statistics could be obtained. The kinds of lard included in the data are simply classed as "lard" by the authorities who made the investigations. Nearly all of the investigations, however, were made before lard substitutes of the kind mentioned came into common use.

The wages statistics were not taken from any one factory, but from a large number of localities and mills all over the United States. They show that there has been an increase of not over 25 per cent. in the wage rates in the period from 1900 to 1913, while in many industries and instances there has been an increase of less than 5 per cent. since 1907 and 1908 in the South.

The statistics of retail food prices regularly secured by the same authority show that there has been a 60 per cent. increase in the average of prices since 1900. Between 1890 and 1900 there was an actual decrease in retail food prices for several years, and the level was practically the same in 1900 as it was in 1890. There was a fairly rapid increase in food prices from 1900 to 1907, but a very much more rapid increase after 1907 up to about the present time. The statistics were secured regularly from a large number of retail stores in over forty different localities, and are for foods ordinarily sold to workingmen and their families.

No data have been gathered in the South or from any other section, so far as I know, showing the substitution of vegetable protein foods for animal proteins.

I do not think we ought to try to draw too definite a conclusion for any specific locality from general statistics or too general a conclusion from specific instances or localities What we need at this stage of our study of this phase of the question are definite data relating to the actual food supply of a given community and the character of the diet toward which the actual diet of the wage-earning family is tending, whatever may be the causes or the governing conditions

(To be continued)

SOUTHERN MEDICAL ASSOCIATION

Ninth Annual Meeting held at Dallas Texas Nov 8 11 1915

The President, Dr Oscar Dowling Shreveport, in the Chair

SYMPOSIUM ON PELLAGRA

Report of Committee on Prevention and Treatment of Pellagra

Dr. H Leslie Moore, Dallas Texas We have come to the conclusion that the ideas advanced by Dr Joseph Goldberger of the U S Public Health Service are the most plausible and that his is probably the only theory that has come anywhere near being proved Nearly all cases of pellagra occur in persons who are not able to get the best nourishing food Very few cases occur in the well-to-do Dr Goldberger observed that in certain orphanages in Mississippi in which there were probably 200 cases of pellagra, after an additional diet was prescribed, only one case recurred the following spring He concludes that pellagra can be prevented by appropriate diet without any change in environment whether it be hygienic or sanitary In other words there was no change made in the environment in any of these cases except the addition of the diet. No attention was paid to the sanitary condition

Report of Committee from the State at Large

Dr. W L. Allison Fort Worth, Texas Pellagra has spread rapidly through the South since 1907, until now each of the Southern States can number its cases by tens of thousands While it is true that in Europe the disease was largely among the poorer classes this does not hold true in this country and especially is it not true in Texas We have no such poor in Texas as are found in Italy, and the disease is frequently found here among the well-to-do We have every reason to believe that the disease is not directly contagious It is a significant fact that with few exceptions nurses and doctors handling these cases in the various institutions in which pellagra is treated have not contracted the disease As in many other diseases a low diet and a lowered resistance seem to be predisposing factors That the disease is purely a dietary one is advocated by many but this theory will not account for all the cases, nor will it explain its sudden incidence and rapid increase in this country Many persons have developed the disease with whose diet no fault could be found Corn as a dietary factor seems to be losing favor The occasional failure of mild cases to respond promptly to a well-balanced diet would seem to discredit any dietary theory The theory of Alessandrini and Scala that pellagra is nothing more than a mineral acidosis" due to an excess of silica or alumina in the water, has met little favor and does not seem to be supported by facts That the disease may be an infection seems to be gaining favor and has much to support it The Thompson-McFadden Pellagra Commission points to the significant fact that no new cases developed in those mill villages having a water carriage sewerage system This commission also reports that close connection with a previous case existed in 80 per cent of their cases There is nothing to show that the disease is hereditary Morphin habitues seem fairly susceptible. The incubation period of the disease seems to be from two to six weeks All animal inoculation experiments have been negative with possibly one or two exceptions The greater prevalence of the disease among women between the ages of 20 and 45 makes it appear that the causative agent is to be found about the home in the daytime The symptoms of the disease are all in the nature of an intoxication more or less chronic in its course When the disease first appeared in this country, 67 per cent of the patients died, while today probably of these 80 per cent get permanently well The prognosis for complete recovery diminishes with age, being very unfavorable in old age, although even the old recover In view of the rapid increase of pellagra, more attention should be paid to the prophylactic treatment Everything should be done to improve the sanitary and hygienic conditions about the home A well balanced and nourishing diet will do much to increase the individual resistance and prevent the disease even if it be of infectious origin A sanitary water carriage sewerage system is certainly a step in the right direction Active treatment of a case of pellagra should be begun by placing the patient in bed for at least a few weeks depending on the severity and progress of the case This of itself lessens the force of most diseases and conserves body energy Hydrochloric acid should always be supplied where it is diminished or absent Of the many remedies, thymol quinin hydrobromid, picric acid and the arsenical preparations, especially sodium cacodylate are apparently the most popular

Pellagra in Texas

Dr K H Beall, Fort Worth Texas The state government has done very little to check the ravages of this new enemy Last year this disease killed 500 of our citizens and made invalids of many thousand more Statistics show that women are much more frequently attacked with the disease when of certain age than men of certain age, or when they become much less resistant to its ravages

Drugs in Pellagra

Dr W T Wilson, Navasota, Texas Up to Nov 1, 1915 I treated 190 cases of pellagra, and I have data on 310 cases treated by other physicians Of this number thirty-five patients died, of whom fourteen were reported as having been treated with picric acid, ten were terminal cases and of the typhoid type, and the patients died within fourteen days after treatment was begun, four had tuberculosis associated with pellagra Two had nephritis complicating Thirty-seven with severe mental symptoms are reported recovered My report is not complete on the number of patients improved or not improved I failed to ask fo- these data but from conversation with many physicians I do not think the percentage in either case will exceed 7 per cent, if it even runs that high The disease does not become very serious before the middle of May Most of the thirty-five deaths reported occurred during the months of July, August and September In pellagra of recent origin picric acid is of no value, that is, when used internally and as a gargle. In severe types or those with malarial symptoms quinin hypodermically should be used first, the picric acid following In the chronic forms picric acid and sodium cacodylate should be alternated or given at the same time and also some sodium bicarbonate at intervals Several physicians report good results from the use of thymol in the treatment of this disease.

Blood in Pellagra

Dr. Beverly Young San Antonio Texas The red cells, hemoglobin, and hemoglobin index vary greatly Taking the peripheral blood as an index, the small mononuclear leukocytes are markedly increased while the other cells, except the polynuclears, are slightly, if at all, affected Some cases show slight eosinophilia but this was variable, and in every case in which the eosinophilia was marked, I was able to find the ova of intestinal parasites A high lymphocyte count is usually of good prognostic import. This high count usually persists not to the same extent, but above normal, for weeks and sometimes months after the acute symptoms subside and the patient is in excellent physical condition The cases developing after admission to the hospital with two exceptions were among those who were fairly well nourished and eating a well-balanced diet and several patients observed during the same period of time who persistently refused nourishment of any kind did not develop pellagra, while the lymphocytes were increased in these cases, they were neither so markedly nor so persistently increased as in the pellagrins Two of these cases were particularly important for comparison since the patients were so persistent in their fast that they died of exhaustion in spite of forced feeding

Etiology of Pellagra with Reference to Amebic Invasion

Dr W A Dearman, Long Beach, Miss While Goldberger is of the opinion that pellagra is caused by the lack of a well-balanced ration, that as a prophylactic as well as a curative measure individuals should be encouraged to eat liberally of peas, beans and other legumes, and that the whole solution of the pellagra problem depends on this principle is not supported in toto by the end-results of the Thompson-McFadden Commission I have been able to demonstrate the presence of amebas in the centrifuged urine of about 50 per cent of pellagrins that came under my observation About 40 per cent showed pyuria The amebas were large and small, and they were very sluggish in their movements Sometimes a cell resembling an encysted ameba would have to be recognized and kept under close observation in order to observe motility, some were actively motile While I have no evidence at hand to prove conclusively that amebic invasion is responsible for pellagra, the symptomatology, the clinical course and the postmortem findings run parallel with the depredations often observed in a profound amebic invasion

Discussion on Pellagra

Dr. Allen W Freeman, Washington, D C The evidence is strong that there is a definite relationship in many cases between the incidence of pellagra and certain deficiencies in the diet Dr Goldberger does not claim, and does not pretend to prove, that diet is the only factor in pellagra, but he has produced pellagra so clean cut that we must either totally disprove his findings or attempt to put the regimen he recommends into effect

Dr. Stewart J Roberts, Atlanta The one thing we most need in this country at present in regard to the etiology of pellagra is absolute honesty in realizing that we do not know the cause of the disease because we cannot prove it By the cure of the disease I understand that a patient who has had the disease is absolutely free of it forever unless reinfected It is one thing for a pellagrin to recover from an attack of pellagra, and quite a different thing for a pellagrin to recover from the disease which we call pellagra

Dr O M Marchman, Dallas, Texas Last August our city society decided to hold a pellagra clinic, and we had at this clinic twenty-five or thirty patients in different stages of the disease Physicians of our county and surrounding counties have used every available remedy, and not only the patients at the clinic but others treated in the various institutions were relieved in a like manner by all of these various treatments with a generous diet We have had probably 100 cases of pellagra in Dallas since last August, an increase of 100 per cent over previous years These pellagrins were from the poorest class and were fed a one-sided or limited diet Many of these patients were put on a generous diet, without any medical treatment whatsoever, and recovered as rapidly as those treated by various shotgun prescriptions

Dr. Allan Eustis, New Orleans I have heard no evidence as yet to counteract Goldberger's ideas I do not believe any of us are able to pass on Goldberger's results until we see the published details of his investigation Dr Goldberger does not claim that he has found the cause and a cure for pellagra, but I believe the condition can be remedied in great part.

Dr John E Stinson, Chickasha, Okla I believe that pellagra is infectious The symptoms of the disease are hard to combat by any method of treatment I do not believe any true case of pellagra has ever been cured

Dr. James A Hayne, Columbia, S C In South Carolina, up to the present time we have had 1,200 deaths from pellagra The death rate from tyhpoid fever in South Carolina is only twenty-six per hundred thousand It is about equal to the death rate from tuberculosis It is a little less than the death rate from the circulatory diseases, such as heart and kidney disease

Dr John L Jelks, Memphis, Tenn In cases of infection of the intestine, such as we have in pellagra, certain diets are very good, while others are very bad Patients with amebiasis will manifest the same train of symptoms as those encountered in cases of pellagra Note the number of cases of amebiasis and the number of cases of pellagra in which there is pain in the back of the neck Note the number of cases of pellagra in which you will find marked melancholia I believe that pellagra is an infection which takes place primarily in the intestine

Dr J R Lehmann, Dallas Texas It has been shown that we carry in our mouths the organisms of pneumonia, and yet not all of us get pneumonia But when conditions are ripe, we develop pneumonia Is it not possible that similarly in pellagra, when conditions exist which favor a lowering of the resistance, the disease develops?

Dr. A A Herold, Shreveport, La I believe diet is the principal causative factor in pellagra In Catto Parish, agricultural and mineral oil regions are side by side There is practically no difference between the people who live there In the mineral oil districts, sanitation is more imperfect, flies and mosquitoes are more numerous in the oil region, and insect-borne diseases, such as typhoid and malaria, are much more common in the oil districts than in the agricultural, yet not one case of pellagra has been reported from the oil fields, but 200 cases have been reported from the agricultural regions There is one explanation for that The usual ration of the farmer is fat meat, cornmeal and some syrup On the other hand, the workers in the oil regions will not stand for poor rations They live on a thoroughly mixed and varied diet and do not develop pellagra

Dr E H Martin, Hot Springs, Ark It has been an axiom with me for several years that an absolute preventive of pellagra is a bank account A man who has money and who is well nourished will not get pellagra, and the man who has pellagra, who gets well nourished will recover

Dr A L Levin, New Orleans A study of the intestinal tract is most important in making a diagnosis of pellagra There is a class of cases of pellagra in which the skin symptoms are lacking Involvement of the nervous system is not present, and the only symptom is the involvement of the gastro-intestinal tract Patients will complain of stomach disturbance, they have symptoms of heaviness and fulness and pain, with slight cramps and loose bowels The fact that pellagra is on the increase is due to the fact that we are not sufficiently expert as yet to differentiate those cases which are pellagra from those which are not

Dr Charles W Garrison, Little Rock, Ark Every speaker, representing either the infectious or opposite theory of pellagra, has admitted that diet is one of the most essential and important factors in prevention and treatment of the disease

Dr Frank H Clarke, Lexington, Ky Lexington is a splendid agricultural district, it is a short-horn and Jersey cattle country, and a fine race horse country many wealthy people have settled there, and yet pellagra has appeared among the rich as well as among the poor

Dr Bruce, Alabama I recall two patients who returned from the Johns Hopkins Hospital, who were treated there for amebiasis with secondary anemia These patients came under my observation during this year with the later symptoms of pellagra The skin symptoms had shown up and the severe nervous symptoms In the beginning, these cases were incorrectly diagnosed and were treated as instances of amebic dysentery, but since developed all of the later symptoms of pellagra

Dr. Louis Leroy, Memphis, Tenn Whenever there is a lesion in the intestinal mucosa, there is a possible port of entry for pellagra When one case occurs in any locality if there are open earth closets, if there is ground infection more cases can be looked for pretty soon

Dr. William Krauss, Memphis, Tenn.: With reference to the open closet, until very recent times we had no pellagra originating in the city of Memphis, but recently we have seen many cases of the disease which originated there, and we have no open closets in our city. Something was said about personal cleanliness, and consequently one might infer from that that only persons who are filthy in their habits contract pellagra, and yet we have an increasing number of cases of the disease in Memphis among the best people who live in the best surroundings, who take two baths a day and eat good nourishing food.

Dr. Thompson Frazer, Asheville, N. C.: I have seen from seventy-five to 100 cases of pellagra, but in the last two years only a few, which I find is in keeping with the history of the disease, which has tended to spread from one section to another.

Dr. C. B. Bowyer, Stonega, Va.: In the coal mining district we have never seen a case of pellagra in a miner. Dr. McCormack says that pellagra, so far as he knows, has never developed in miners in Kentucky.

Dr. W. L. Allison, Fort Worth, Texas: I now agree with Goldberger that diet stands as a predisposing factor. When you feed pellagrins good nourishing food, many of them recover. It is not true in Texas that pellagra occurs only among the poor.

(To be continued)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

Forty-First Annual Meeting, held at Louisville, Ky., Oct. 19-21, 1925

(Concluded from page 194)

Etiologic Relationship Existing Between Gastric Ulcer and Gastric Cancer

Dr. Frank Smithies, Chicago: It seems to have been shown that benign gastric ulcer can be produced in a multitude of ways, the method of production having only relative effect on the ulcer resulting pathologically. It seems that in a given gastric ulcer it is impossible to prognosticate its course, duration or type of termination. Free excision of all chronic gastric ulcers should be performed whenever such procedure is mechanically possible.

DISCUSSION

Dr. Charles G. Lucas, Louisville, Ky.: None of us are competent to give a statement as to when an ulcer may become malignant, nor how long it will continue. I have in mind a patient who had a tumor of six months' standing before seeking consultation. A laparotomy was done and the tumor was found to be inoperable. Patients with ulcer of the stomach should be placed in bed as soon as they come under the care of the internist, and they should then be treated carefully for from four to five weeks. They should report often and submit to frequent examination. If after six or seven weeks of effort of this kind no results are obtained, then a surgeon should be called. These cases should be treated by both the internist and the surgeon working together, and finally they should come back to the internist.

Dr. Willard J. Stone, Toledo, Ohio: I should like to ask Dr. Smithies what percentage of cases of gastric and duodenal ulcer in his experience shows a positive Wassermann reaction?

Dr. Chauncey Dowden, Louisville, Ky.: If conditions incidental to appendicitis cause ulcer, then obstipation and constipation become important etiologic factors. If appendicitis will cause gastric ulcer, why will not chronic obstipation bring about a like condition? In my opinion it may even produce pyloric spasm. If we have a condition that will produce pyloric spasm, we also have a condition which will in time cause gastric ulcer. I should like to impress on the internist the importance of treating the ulcer patient before the condition becomes ulcer. The majority of patients who come to us showing a condition of hyperacidity are in all probability ulcer patients. This is the time when they need proper attention, and in all probability the right treatment administered at this time would prevent the development of duodenal or gastric ulcer.

Dr. Frank Smithies, Chicago: In our proved ulcer cases the ratio of positive Wassermann was 1:300. One of the first points in the cure of disease is to remove all the foci of infection in the mouth, throat and nose, and we should also look out for an infected appendix or an infected gallbladder. If we let these organs pass by unnoticed we are simply locking the door after the horse has escaped.

The Heart and Blood Vessels in Tuberculosis

Dr. Francis M. Pottenger, Monrovia, Calif.: Tuberculosis may affect the blood vessels either from within or from without, and the lesion may be of all degrees of severity, from that of every slight trauma to necrosis. Sometimes an infection is followed by an opening in the vessel wall and hemorrhage; at other times an exudation results which goes on to repair, and again an endarteritis with obliteration of the lumen occurs. It seems probable that many of the hemorrhages in tuberculosis, particularly those in which only small amounts of blood are expectorated, may be due to the injury of the vessels resulting from the action of toxins, or the formation of tubercles in the walls of the vessels. The capillaries are most commonly affected, while small veins and arteries are less commonly so. Tubercles may be found in the walls of any vessels of the body, including the aorta. This being true, it is surprising that miliary tuberculosis is not a more common infection than it is. That it is not is probably due to the fact that the vessel is often occluded by the inflammatory process so that bacilli do not get into the blood stream, and protective cell sensitization and antibodies reduce the virulence of or destroy the bacilli which gain entrance to the blood stream before they find lodgment in the tissues in those patients in whom infection has been present long enough to build up a specific immunity.

For the heart muscle itself I have great confidence in digitalis and citrated caffein. If the early symptoms are recognized and the patient is put in the recumbent position and given digitalis in proper doses, the crisis can often be averted. Digitalis strengthens the heart's contractions and in this way probably affords better nutrition to the organ. If digitalis is to be used, it should be used in doses sufficiently large to produce an effect. I use a standardized tincture in doses of from 10 to 15 minims three times a day until the pulse improves or the physiologic effect is reached. I then discontinue the remedy for three days and repeat again, giving the remedy three or four days and then withholding it for a like period. If the case is urgent I often give digitalis intravenously in 15 minim doses three times a day until the effect is produced. Citrated caffein can be given in 3 grain doses every four hours and continued as long as necessary.

The patient should be fed nourishing food in concentrated form. The bowels should be kept free to relieve any toxins that can be removed through the alimentary canal. The important thing in the handling of these cases is to recognize them early and to treat them properly. These degenerative changes in the heart muscle may threaten the patient's life and yet the heart may recover itself as the patient improves.

Spasmophilia

Dr. J. P. Sedgwick, Minneapolis: In the acute and subacute cases under 1 year, with high electrical reactions, the results obtained with large doses of calcium chlorid are brilliant. In the more chronic and very severe cases calcium is of definite value. I have also used subcutaneous injection of 20 c.c. of a 0.125 per cent. solution of magnesium sulphate. The results with this method have also been satisfactory, but the injections are painful and frighten the older children. The electrical reactions give us a means of diagnosing this condition, whether active or latent, thus distinguishing it in its various manifestations, such as the convulsions from epilepsy and the laryngospasm from inflammatory croup. Laryngospasm, general convulsions, tetany in children, spasmodic apnea and the Chvostek and Trousseau phenomena are manifestations of the same diathesis or condition The condition is closely related to some metabolic disturbance, probably of the calcium salts, and is markedly benefited by a carbohydrate, cow's milk free, or a breast milk diet Phosphorus and cod liver oil are of value by the effect on the calcium retention Calcium and magnesium give quicker and more definite results The prognosis is usually good, in the cases in which treatment is begun early

Diagnosis of Renal Infections

Dr John R Caulk, St Louis Of 182 cases, only 17 7 per cent appeared with a diagnosis of kidney disease It is striking that not a single case of pyonephrosis came in with a diagnosis of renal infection, and it was confused with malaria in a high percentage of cases The average duration of symptoms in this series has been three years and six months, so long in many cases as to deprive the individual of satisfactory chances of recovery Renal pain was present in 40 9 per cent, was most common in pyonephrosis and nephrolithiasis, about 70 per cent, and least common in tuberculosis, 17 6 per cent Fever was present in 15 7 per cent As to faulty diagnosis, appendicitis appears in 6 6 per cent of all the cases, it is most commonly confused with nephrolithiasis, 26 5 per cent, and 6 5 per cent. in pyelitis It was not confused with pyelonephritis, pyonephrosis or tuberculosis Bladder trouble was diagnosed in 60 per cent of all cases, most common in tuberculosis, 93 per cent, and least in nephrolithiasis, 30 per cent Pus was present in 93 per cent, casts in 7 per cent, most of these in pyelonephritis 35 per cent. The general average is extremely low

The colon bacillus was found in 57 per cent of the cases, the staphylococcus in 23 5 per cent., 17 5 per cent were mixed Tuberculosis was present in 9 4 per cent of all cases The functional test was diminished in 68 7 per cent of the cases It showed its most marked diminution in pyonephrosis, and its slightest in pyelitis The Roentgen ray was positive in 20 4 per cent of all cases Cystoscopic examination showed changes in the bladder wall in 58 9 per cent

Mechanics of Renal Infection

Dr Edward L Keyes, Jr., New York Renal colic is an acute stoppage of the ureter, the cause of which is usually a small stone or a slight kink On being called to such a case we should immediately administer morphin to the point of relieving pain, not only for the purpose of consoling the sufferer, but also for the purpose of curing the condition, for if we can relieve the pain, and thereby relax the spasm, we actually relieve the retention, and permit the unfolding of the kink for the passage of urine about the stone, or even the passage of the stone itself In the second place, we have here a clue to the mystery that surrounds irrigation of the renal pelvis Much of the benefit attributed to this treatment is undoubtedly due to the passage of the ureteral catheter for it is to be noted that many cures attributed to this treatment follow the first or the second washing Such cures are due to mechanical relief of slight obstructions I have several times relieved acute renal infection by ureteral catheterization, and Dr Howard Lilienthal some years ago recorded several striking illustrations of the therapeutic effect of ureteral catheterization in acute renal infection

Prolapse of Bladder and Uterus

Dr Thomas J Watkins, Chicago The pathologic changes in the part of the bladder wall which is attached to the vaginal wall have not received sufficient attention These changes are due to stretching of this part of the bladder wall, and produce vesical symptoms The urethra is usually displaced downward, and disturbs continence of urine The pathologic changes in the uterus result mostly from circulatory disturbances, such as congestion, edema, varices and hyperplasia The following operations are advised, the choice depending on the amount of prolapse and the age of the patient as regards future pregnancies (1) an advancement operation, (2) fixation of the round ligaments to the anterior vaginal wall and fascia, and (3) the transposition operation, transposing the relative position of the bladder and uterus This is also called the interposition operation Partial excision or amputati n of the cervix is done with all of these operations as may be indicated, and a perineorrhaphy is made The advancement operation consists chiefly in advancing the vaginal wall, including the submucous connective tissue, on the cervix This operation gives excellent results in cases of a moderate amount of prolapse, and does not interfere with subsequent pregnancies Vaginal attachment of the round ligaments into the vaginal wall is done in conjunction with the advancement operation in cases with a greater amount of prolapse, during the child-bearing period and in cases of retroposition of the uterus The transposition operation is the one of election after the menopause The fundus of the uterus is attached to the connective tissue and vagina sufficiently low to make recurrence of the bladder hernia impossible I have had no recurrence of cystocele after this operation, which I have been doing for seventeen years The uterus is never in obstruction in the vagina when so sutured Modifications of the operation are given for cases of very large uterus and for cases of complete prolapse with a very small uterus The cavities of the uterus and vagina may be completely closed in very extensive cases of prolapse in elderly women in whom there is no objection to occlusion of the vaginal canal

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Obstetrics and Diseases of Women and Children, York, Pa

November LXXII No 5, pp 769 944

1 *Present Tendencies in Gynecologic and Obstetric Practice C L. Bonifield, Cincinnati
2 *Local Anesthesia in Herniotomy J H Jacobson, Toledo
3 *Case of Gallstone Causing Intestinal Obstruction and Volvulus R B Hall, Cincinnati
4 *Cholecystectomy vs Cholecystostomy L W Swope, Pittsburgh
5 *Unusual Contents of Inguinal Hernia, Report of Case C W Moots, Toledo
6 Surgery of Appendix J W Keefe, Providence, R I
7 *Prognostic Sign in Acute Suppurative Peritonitis H O Pantzer, Indianapolis
8 **Rare Congenital Abnormality of Sigmoid B Van Sweringen,* Fort Wayne, Ind
9 Postoperative Ureteral Fistula H D Furniss, New York
10 *Mesenteric Thromboses, Report of Two Cases W F Darnall, Atlantic City, N J
11 Remove Uterus Instead of Ovaries for Incurable Cases of Menstrual Disorders J H Carstens, Detroit
12 Use of Sodium Citrate for Direct Blood Transfusion C B Schildecker, Pittsburgh
13 Newer Conceptions of Intestinal Stasis G W Crile, Cleveland
14 "Gas Pains" G K. Dickinson, Jersey City, N J
15 *Use of Luteum Extract in Treatment of Menstrual Disorders A P Leighton, Jr Portland, Me
16 *Present Status of Twilight Sleep in Obstetrics Study of Over Two Thousand Cases A J Rongy New York
17 Acute Appendicitis in Children K H Aynesworth, Waco, Texas

1 and 10 Abstracted in The Journal, Oct 2, p 1213
2 and 3 Abstracted in The Journal, Oct 2, p 1211
4, 5, 7 and 8 Abstracted in The Journal, Oct 2, p 1212
15 and 16 Abstracted in The Journal, Oct 2, p 1213

Annals of Surgery, Philadelphia

November, LXII, No 5, pp 513 640

18 Mesenteric Thrombosis, Report of Cases E Eliot, Jr, and J W Jameson, New York
19 *Case of Splenectomy C L Scudder, Boston
20 *Diagnosis of Appendicitis in Early Typhoid R Winslow, Baltimore
21 Typhoid Perforation J H Gibbon, Philadelphia
22 Frequency of Chest Complications Among Wounded K. Taylor, Paris
23 *Transverse Abdominal Incision W Meyer, New York
24 Closure of Mucocutaneous Fecal Fistula E Beer New York
25 Anatomic Study of Femoral Hernia T T Thomas Philadelphia
26 Clinical Status of Autograft A A Law Minneapolis
27 Fractures of Femur C R Steinke, Philadelphia
28 End Results in Fractures of Both Bones of Leg R L John Philadelphia

19 **Case of Splenectomy**—Scudder records a case of splenic anemia which terminated fatally following splenectomy A thrombosis occurred in a vascular system of the mesenteric

not directly connected with the vascular system of the spleen At the second operation the gangrene of the small intestine was found definitely localized and had occurred independently of any plugging thrombosis of the splenic vessels proximal to the ligatures placed at the time of the splenectomy

20 **Appendicitis in Early Typhoid** —Winslow reports four cases occurring in the same hospital at almost the same time and treated by several different surgeons From the appearance of the appendixes at the time of operation, and from the subsequent course of the case he says it is evident that unnecessary operations were done during the active period of a dangerous disease The first patient was taken suddenly ill with headache and pain in the right side while at work. She had been in good health up to this time The second patient appears to have had a general diffuse tenderness exaggerated on pressure in the appendical area on admission to the hospital Apparently the disease began five days previously with chilly sensations followed by fever and not with pain The third patient was taken sick with abdominal pain headache and a stiff feeling of the abdomen There is no history of preceding fever The fourth patient was taken with pain and slight elevation of temperature. In three of these four cases pain appears to have been the symptom that first attracted the patients' attention and not fever Chilliness and fever was the prominent feature of the onset of one case Headache was noted in two cases as one of the initial symptoms and nausea and vomiting in two patients The leukocyte was 8.200 8 000 and 10 000 in three cases and in one case the polynuclears were 74 per cent, small mononuclears 22 per cent and large mononuclears 4 per cent. but the leukocyte count was not recorded One patient had continuous pain in the right iliac region with tenderness and muscular rigidity at McBurney s point A second had diffuse abdominal tenderness with distinct muscular spasm on deep pressure over the appendical region A third had pain in the right side of the abdomen tenderness but not much rigidity In none of these cases was the Widal reaction positive at the time of the operation but became so in each subsequently Rose spots also do not appear at such an early period of typhoid In all these cases the appendix was somewhat congested possibly thickened but not acutely inflamed while the large and small intestines were also more hyperemic than normal The mesenteric and prevertebral chains of glands were also markedly enlarged in most of the cases

Winslow believes mistaken diagnosis of appendicitis in early typhoid is by no means uncommon The leukocyte count is probably the most reliable diagnostic sign, and it is usually low in typhoid and markedly increased in appendicitis though at times there may be a low leukocyte count in serious and even fatal appendicitis There is less muscular rigidity and tenderness in these typhoid cases than in cases of genuine appendicitis

23 **Transverse Abdominal Incision.**—Meyer has tried the transverse abdominal incision of Braunschweig and Perth s in eight cases and has been so favorably impressed with it, that he feels it should be used more frequently

Archives of Internal Medicine, Chicago

November XII No 5 pp 69-692

29 *Carbohydrate Utilization in Diabetes E. P Joslin Boston
30 *Renal Function as Measured by Elimination of Fluids Salt and Nitrogen and Specific Gravity of Urine. H O Mosenthal Baltimore
31 *Differentiation of Cerebral and Cardiac Types of Hyperarterial Tension in Vascular Disease. W J Stone Toledo
32 Treatment of Cardiac Insufficiency by New Method of Exercise with Dumb-Bells and Bars T B Barringer Jr and J Teschner New York.
33 *Resistance of Red Blood Cells to Hypotonic Salt Solution in Various Anemias L. W Hill Boston
34 *Study of Case of Auricular Flutter S A. Levine and C. Frothingham Jr Boston
35 Sino Auricular Heart Block Report of Case in Man J A. E. Eyster and J S Evans Madison Wis.
36 *Clinical Studies on Respiration Effect of Carbon Dioxid in Inspired Air on Patients with Cardiac Disease. F W Peabody Boston.
37 *Poisoning by Mercuric Chlorid and Its Treatment S W Lambert, and H S Patterson New York
38 *Coagulation Test for Syphilis as Devised by Hirschfeld and Klinger H N Cole and S Eng Kiu Chiu Cleveland

29 **Carbohydrate Utilization in Diabetes** —Joslin closes his article as follows It is gratifying to be able to record that the recent experimental evidence confirms the old clinical view that the severe diabetic still retains power to utilize a portion of the carbohydrate of his diet small though it may be and that herein lies renewed hope for the success of treatment

30 **Renal Function** —The nephritic test meal as suggested by Hedinger and Schlayer, and elaborated by Mosenthal in this paper has not only proved itself to be an admirable test for renal function but also in many cases has been of great value in diagnosing cardiac renal and other conditions The test is a qualitative one of the mode of urinary function as measured by the specific gravity salt, nitrogen and water excretion in two hourly periods during the day, and for a twelve-hour period at night In chronic diffuse (parenchymatous) nephritis the condition of renal function is characterized by its variability In these instances, the results of the test meal have proved to be extremely valuable in giving an idea of the status of salt nitrogen and water excretion besides the picture of renal efficiency as a whole The findings in myocardial insufficiency vary according to the activity of the heart Distinct differences are found with myocardial decompensation and the accumulation of edema the period of eliminating edema and subsequently, when cardiac compensation is again fully established it requires some time before the kidney resumes its normal activity This intervening period is indicated by a tendency to a low, fixed specific gravity and a nocturnal polyuria. During the period of full myocardial decompensation the results of kidney activity are characteristic the specific gravity is markedly fixed at the level of about 1 020 the salt output is diminished, that of nitrogen is high in marked contrast to the salt and there is oliguria When chronic nephritis and cardiac decompensation coexist as they so often do in hypertensive nephritis the urine may exhibit the characteristics due to either lesion The determining factor is probably to be found in the chronic nephritis which may or may not be so far advanced as to present an unchanging barrier to the influence of renal congestion

31 **Differentiation of Cerebral and Cardiac Types in Vascular Disease** —Stone urges that the determination of systolic and diastolic pressures by the auscultatory method should supplant the palpatory method The pulse pressure measures the energy of the heart in systole in excess of the diastolic pressure For clinical purposes it represents the load of the heart Under normal conditions it is approximately 50 per cent. of the diastolic pressure Since the diastolic pressure represents the constant pressure between systoles it is a better index of peripheral resistance and of hypertension than the systolic pressure A sustained diastolic pressure of 105 to 110 or above signifies hypertension irrespective of the height of the systolic pressure The diastolic is less influenced by physiologic factors than the systolic pressure In arterial hypertension incident to myocardial and valvular lesions the pulse pressure and heart-load are increased as a rule the overload factor averaging 46 per cent in the twenty-four patients of the cardiac hypertension group

In the cerebral hypertension group the diastolic pressure is persistently high from 120 to 160 This group comprises the nephritic cases so-called with symptoms of polyuria albumin casts and edema The pulse pressure is not so greatly increased as a rule, and the heart-load percentage is within normal limits of 40 to 60 per cent. The term cardiorenal disease applied to patients with cardiac manifestations in nephritis Stone says, is a misnomer Cardiac symptoms are many times present in such cases but the manifestations and terminal events of vascular disease associated with disturbed renal function are more cerebral than cardiac. If any compound name is applied descriptive of the condition the term cerebrorenal would be more approximate The term vascular disease, however, covers the ground more completely In acute circulatory failure due to shock, including hemorrhage, in an individual with a strong acting heart, the diastolic pressure is decreased, while the pulse pressure is increased, since the heart is exerting all its force in an endeavor adequately to supply the periphery with blood In circulatory failure due to cardiac dilatation or myocardial degeneration incident to acute or long continued illness, the systolic pressure falls and tends to approximate the diastolic pressure, with the result that the pulse pressure is decreased

In acute infections a sustained pulse pressure warrants a more favorable prognosis, as a rule, than a low pulse pressure, other things being equal, although the change from normal to low pulse pressure in circulatory failure may occur rapidly As a rule, the lower the pulse pressure, the greater the danger of circulatory failure Measures directed to the reduction of blood pressure by diet, habits, venesection and vasodilators are usually indicated in the cerebral hypertension group because of the high diastolic pressure, but are rarely indicated in the cardiac hypertension group The high systolic pressures in the cardiac hypertension group are compensatory measures and rest, digitalis, strophanthin, camphor or caffein are indicated when the heart muscle shows signs of fatigue

33 **Resistance of Red Blood Cells**—Hill found that the resistance of normal blood to hemolysis by hypotonic salt solution is fairly constant The figures for pernicious anemia and for secondary anemia are practically the same In any given case of anemia, whether primary or secondary, the resistance may be high, normal or low, there is no such constant finding as there is in normal blood In general, in both pernicious and secondary anemia hemolysis is likely to begin sooner and end later than it does in normal blood The hemoglobin content of the cell seems to bear no relation to its resistance Arsenic definitely increases the resistance of the red cells and tends to inhibit hemolysis Splenectomy increases the maximal resistance, it may decrease the minimal resistance

34 **Case of Auricular Flutter**—Auricular flutter was observed by Levine and Frothingham twice in a man with organic disease of the aortic valve consisting in stenosis and slight regurgitation Opportunity was given to study him during and between attacks by means of the electrocardiograph and also by tracings from the jugular vein and brachial artery, taken simultaneously with the electrocardiogram In this man the auricular rate during flutter varied at different times from 350 5 per minute to 324 7 per minute The ventricles were beating most of the time during the attacks at half that rate showing a 2 1 block During the attack of flutter the auricles were practically independent of vagus control, although a slight effect on the auricular rate could be produced by deep breathing The ventricles could be inhibited by pressure on either the right or left eye but the auricles could not be inhibited During the attack of flutter there was slight pulsus alternans as shown in both the electrocardiogram and brachial tracings This disappeared when the heart returned to its normal rhythm Roentgenograms showed no appreciable difference in the outline of the heart during the attack, and the pulse pressure, which was small normally in this case, diminished during flutter

36 **Effect of Carbon Dioxid on Patients with Cardiac Disease**—Experiments are described by Peabody in which normal subjects and patients with cardiac or cardiorenal disease have breathed air containing increasing amounts of carbon dioxid The inspired air was analyzed for its carbon dioxid content, and the total ventilation of the subject per minute was measured at frequent intervals Thus the increase in ventilation caused by a given rise of carbon dioxid in the inspired air could easily be determined It was found that normal persons respond to carbon dioxid in a fairly constant manner, and that their total ventilation is doubled when the carbon dioxid is between 4 2 and 5 4 per cent Cardiac and cardiorenal patients whose circulation is compensated, and who have no evidence of an acidosis as shown by the carbon dioxid tension of the alveolar air, behave in an exactly similar manner Cases, however, with decompensation and with a grade of acidosis sufficient to lower the alveolar carbon dioxid tension react much more quickly to carbon dioxid, and may double their ventilation when the carbon dioxid is only 2 to 3 per cent of the inspired air Dyspnea is therefore much more easily produced in the patients with acidosis than in those without acidosis That the increased sensitiveness to carbon dioxid does in fact depend on the acidosis was especially clearly demonstrated in two cases Although the results reported relate only to the dyspnea caused by the inspiration of air containing carbon dioxid, Peabody believes it is wholly logical to assume that the same effect would be produced by acids which entered the blood stream from the body cells The presence of an acidosis would thus render the organism more sensitive to the carbon dioxid or other acids formed during muscular work, and the amount of muscular work sufficient to cause dyspnea would be less than under normal conditions

37 **Poisoning by Mercuric Chlorid and Its Treatment.**—The treatment, as it is formulated by Lambert and Patterson, for cases coming under observation early, is as follows The first indication is to give the patient the whites of several eggs and then wash out the stomach thoroughly This has usually been done before the patients are admitted to the hospital On admission, the stomach contents are expressed and examined for mercury, the stomach is thoroughly washed and a pint of milk introduced If no stomach contents are obtained before lavage then the lavage water is examined for mercury Urine passed spontaneously, or that obtained by catheter, is examined for mercury The metal appears in the urine in from three to twenty-four hours after it has been swallowed If more than a day has elapsed since the poisoning occurred, a stool should also be examined for the poison If the first lavage does not allay the nausea and vomiting, it is repeated after an hour, and the following routine is begun as soon as the stomach will permit 1 The patient is given every other hour 8 ounces of the following mixture Potassium bitartrate, 1 dram, sugar, 1 dram, lactose, one-half ounce, lemon juice, 1 ounce, boiled water, 16 ounces Eight ounces of milk are administered every alternate hour 2 The drop method of rectal irrigation with a solution of potassium acetate, a dram to the pint, is given continuously The amounts of urine secreted under this treatment are very large In Case 8, 269 ounces were passed in twenty-four hours on the fourteenth day of treatment 3 The stomach is washed out twice daily 4 The colon is irrigated twice daily, in order to wash out whatever poison has been eliminated in that way 5 The patient is given a daily sweat in a hot pack

The authors emphasize the necessity of keeping up the treatment with the colonic drip enteroclysis day and night without interruption In cases in which one single dose has been taken, after two negative examinations of the urine, on successive days, it seems legitimate to stop the treatment For the less severe cases, a week may be a sufficient time for treatment When large or successive doses have been taken, or when there is a preexisting kidney lesion, or when treatment begins several days after the poison is taken, longer periods of treatment, up to three weeks, are necessary

38 **Coagulation Test for Syphilis**—Cole and Chiu tested fifty-one specimens of spinal fluids from different patients In quite a few cases the Wassermann has given negative results while the coagulation test has been positive, in fact, of the fifty-one cases, the coagulation test gives eleven more positive than the Wassermann, making a difference of 21 per cent more positives for the coagulation test The authors believe that the spinal fluid, inactivated at 58 C (136 4 F) for half an hour and used in dose of 0 4 c c, gives good results with this test.

Boston Medical and Surgical Journal

November 18, CLXXIII No 21, pp 759 794

39 Midwife Problem A K Paine, Boston
40 Pregnancy Clinic and Midwife, Comparison J L Huntington, Boston

41 *Clinical Records in Relation to Teaching and Research Plan to Promote Conservation and Utilization of Material E S Kilgore San Francisco
42 Nomenclature and Classification of Diseases in Use in University of California Hospital J I Whitney San Francisco
43 *Gummatous Cervical Adenitis Its Relation to and Mistaken Diagnosis for Tuberculous Cervical Adenitis W P Coues Boston
44 Local Anesthesia in Radical Cure of Hernia A. Ehrenfried Boston
45 Elimination of Voice Defects Following Adenoid and Tonsil Operations W B Swift Boston

41 **Completeness and Accuracy of Clinical Records**—Experiences are reported by Kilgore in the cooperation of a university hospital medical school and training school for nurses to promote accuracy and completeness of clinical records To the same end of recording certain data In addition to the usual diagnosis index (which should be made to include many more of the secondary diagnoses), a plan is described for indexing many clinical facts which cannot be included among the diagnoses

43 **Diagnosis for Tuberculous Cervical Adenitis**—Coues urges that cases of cervical adenitis supposed to be tuberculous yet not quite characteristic should be regarded as possibly gummatous and careful study should be made to prove or disprove this supposition definitely The clinician must fall back on consideration of the case with an exhaustive history pertaining to possible syphilis, to arrive at a correct diagnosis

Bulletin of Lying-In Hospital of City of New York

September X No 2 pp 79 150

46 Extraperitoneal Cesarean Section Report of Three Cases J W Markoe New York
47 *Report of Work of First Division of Hospital* M K. Smith New York
48 Fissure Fracture of Vault of Skull in Newborn E D Truesdell New York
49 *Practical Experience with Obstetric Chair J W Markoe New York
50 Three Cases of Congenital Anomaly of Kidney J R Losee Brooklyn
51 Hygiene of Pregnancy C W Kosmak New York
52 Case of Primary Carcinoma of Appendix J W Markoe New York.

49 **Experience with Obstetric Chair**—Markoe's experience with his obstetric chair has been favorable in more than 10 per cent. of the cases, labor lasted only one hour or less after the patient was put in the chair In one case apparently fifteen minutes sufficed though here the cervix was four fingers dilated at the time while in three cases in which the cervix was only two or three fingers dilated from thirty to forty-five minutes was required In eleven cases in which conditions anatomically might have necessitated operative interference spontaneous delivery occurred in other words in 33 3 per cent of the cases the obstetric chair apparently obviated the necessity of any other artificial aid Of these eleven patients, eight were in the first stage of labor and three in the second stage In two cases the patient was kept in the chair for five and six hours respectively, while in another one hour sufficed to effect delivery, in five cases, two hours and in three cases three hours were necessary for spontaneous delivery The average duration of the entire labor in these cases were twenty-two and one-half hours, while the average time in the chair was three and-one-third hours Of the seven multiparas with normal pelves, all were delivered spontaneously the average time in the chair being two and one-half hours Of six multiparas with abnormal pelves, in only one case of those spontaneously delivered was the patient in the chair for more than two hours

Georgia Medical Association Journal, Augusta

November V, No 7 pp 149 170

53 Tumor Formations of Unusual Interest. E C Davis Atlanta
54 Principles and Practice in Treatment of Cancer M B Hutchins Atlanta.
55 Uncertainty of Roentgen Ray Shadows of Lungs in Tuberculosis A. Elkin Atlanta.
56 Spinal Anesthesia in Surgery Report of Nine Hundred and Twenty Seven Cases G Y Massenburg Macon.
57 Probable Cause and Logical Treatment of Epilepsy J C Pate Valdosta
58 Preventive Treatment of Pellagra by Injections of Bad Maize Extracts H I Harris Atlanta

Journal of Biologic Chemistry, Baltimore

November XXIII No 1 pp 1 411

59 Biochemistry of Iodin Distribution of Iodin in Plant and Animal Tissues A T Cameron Manitoba Canada
60 Influence of Electrolytes on Diffusion of Potassium Out of Cell and Into Cell J Loeb and M Cattell, New York.
61 Measurement of Toxicity W J V Osterhout Cambridge England
62 Synthesis of Normal Tridecylic and Tetracosanic Acids P A Levene C J West C H Allen and J van der Scheer, New York
63 *Metabolic Relationship of Proteins to Glucose Glucose Formation from Human Proteins N W Janney and N R Blatherwick New York
64 *Determination of Reducing Sugars Volumetric Method for Determining Cuprous Oxid Without Removal from Fehling's Solution F M Scales Washington, D C
65 *Acid Base Equilibria in Blood After Parathyroidectomy D W Wilson T Stearns and M DeG Thurlow Baltimore
66 *Excretion of Acids and Ammonia After Parathyroidectomy D W Wilson T Stearns and J H Janney Jr Baltimore
67 Role of Electrolytes in Diffusion of Acid Into Egg of Fundulus J Loeb New York.
68 Relation Between Configuration and Rotation of Epimeric Monocarboxylic Sugar Acids P A Levene New York
69 *Effect of Ingested Purins on Uric Acid Content of Blood W Denis Boston
70 Apparent Change of Osmotic Pressure of Cell Contents with Osmotic Pressure of Surrounding Solution J Loeb and H Wasteneys New York
71 Salicylates Methods for Quantitative Recovery of Salicyl from Urine and Other Body Fluids. T W Thoburn and P J Hanzlik Cleveland
72 Nature of Dietary Deficiencies of Rice E V McCollum and M Davis Madison Wis
73 *Essential Factors in Diet During Growth E V McCollum and M Davis Madison Wis
74 *Cause of Loss of Nutritive Efficiency of Heated Milk E V McCollum and M Davis Madison Wis
75 *Effective Apparatus for Evaporating Aqueous Extracts by Means of Current of Air* T B Aldrich Detroit
76 Xanthophyll Principal Natural Yellow Pigment of Egg Yolk Body Fat and Blood Serum of Hen L S Palmer Columbia Mo
77 Behavior of Some Hydantoin Derivatives in Metabolism H B Lewis Philadelphia
78 *Complex Carbohydrates and Forms of Sulphur in Marine Algae of Pacific Coast* D R Hoagland and L L. Lieb, Berkeley Calif
79 Experiments on Fate of Ingested Sodium Nucleate in Human Subject. M H Givens and A. Hunter Ithaca N Y
80 Determination of Ammonia Nitrogen in Steer's Urine. D C Cochrane Washington D C
81 *Studies on Blood Fat. Fat Absorption and Blood Lipoids* W R Bloor Boston
82 Configuration of Some of Higher Monosaccharids G Peirce.
83 Relative to Total Nitrogen and a Amino Nitrogen Content of Pepsins of Different Strengths T B Aldrich Detroit
84 Identity of Proteins Extracted from Wheat Flour by Usual Solvents. C H Bailey and M J Blish St Paul Minn
85 *Effects of Certain Electrolytes and Lipoid Solvents on Osmotic Pressures and Viscosities of Lecithin Suspensions* A Thomas Worcester Mass
86 *Abderhalden Reaction D D Van Slyke M Vinograd Villchur and J R Losee New York
87 Micromethod for Gasometric Determination of Aliphatic Amino Nitrogen D D Van Slyke New York.

63 **Metabolic Relationship of Proteins to Glucose**—The authors state that the ratio 3 60 1 may be accepted as representing the relation between the nitrogen contained in human muscle protein and the glucose originating from the same in metabolism. It may on these grounds be properly concluded that the proteins of the human organism collectively may yield a maximum of about 58 per cent. of glucose in diabetic metabolism In the fasting human diabetic the severest type when glycogen and possible sources of glucose other than protein are exhausted, the urinary G N ratio of 3 4 1 may therefore be accepted as an average value

64 **Reducing Sugars**—A new volumetric method is described by Scales for the determination of cuprous oxid in Fehling's solution The cuprous oxid without filtration from the solution is converted into cuprous chlorid and then pipetted into a known quantity of a dilute iodin solution The iodin which is not reduced is then titrated with sodium thiosulphate solution. The data indicate that the method will

give results as accurate as those obtained with the gravimetric method Dextrose, maltose, lactose, invert sugar and no doubt other reducing sugars may be estimated by this procedure This method yields results in one quarter of the time required to obtain them by the gravimetric method The method may also be used for the quantitative determination of copper

65 **Acid-Base Equilibria**—According to Wilson, Stearns and Thurlow, after parathyroidectomy a condition of alkalosis may develop which is neutralized by acid products formed by the muscular activity incident to tetany An acidosis condition may result after periods of acute tetany Periodic variations in the "nonvolatile" acid-base equilibrium seem to accompany the periodic attacks The acidosis condition resulting from acute tetany or the injection of acid is associated with relief from tetany Calcium salts, when injected into animals in tetany, lower the value of the dissociation constant of oxyhemoglobin and the alveolar CO pressure, an effect similar to that brought about by the introduction of acids The above conclusions were reached from a study of the variations of the values of the dissociation constant of oxyhemoglobin, the alveolar CO pressure and the hydrogen-ion concentration of the blood from dogs subjected to parathyroidectomy

66 **Excretion of Acids**—After parathyroidectomy in dogs, there is usually a sudden diminution in the excretion of acids and ammonia and a decrease in the ammonia ratio and the hydrogen-ion concentration of the urine With the development of tetany, the elimination of acids and ammonia increases, accompanied by increased values of the ammonia ratio and the hydrogen-ion concentration of the urine These variations the authors believe may indicate that an alkalosis condition results after parathyroidectomy, but is neutralized by the tetany which develops After acute or chronic tetany, an acidosis may occur

69 **Ingested Purins and Uric Acid of Blood**—Results are presented by Denis showing the effect of purin free and of high purin diets on the uric acid content of the blood of normal men and of persons suffering from various chronic diseases In normal men no increase in the circulating uric acid is produced by the ingestion of large quantities of purin In persons suffering from renal insufficiency a more or less marked increase in the uric acid content of the blood is produced by high purin feeding It is, therefore, concluded that when the determination of uric acid in the blood is undertaken as a diagnostic test the insistence on a preliminary period during which no purin-containing foods are consumed is unnecessary except in cases in which kidney insufficiency exists, or perhaps in the case of persons who habitually consume extremely large quantities of purin-containing foods

73 **Essential Factors in Diet**—McCollum and Davis conclude that certain at present unidentified substances aside from protein, carbohydrates, fats and salts are indispensable for growth or prolonged maintenance, and furthermore, that there is a class of such accessories soluble in fats and another soluble in water and alcohol From the data available it seems highly probable that, while the amount of accessory substances of either of these classes which is required to induce growth is small, the evidence points to the belief that a certain quantity must be present before any growth can take place, and that above this amount growth seems to be in some measure proportional to the amount of accessories present It is obvious that in the study of the relative values of isolated proteins fed with mixtures of the relative values of isolated proteins fed with mixtures of purified food substances comparable amounts of these two classes of accessories must be supplied Otherwise no safe interpretation can be put on the results

74 **Loss of Efficiency of Milk**—McCollum and Davis found that skim milk powder which has been wet and long heated in a double boiler or heated for a period of one hour in an autoclave at 15 pounds pressure, no longer supports growth as does the unheated product When heated, milk powder also loses its property of supplementing certain rations made up of polished rice, plus salts and butter fat, namely, rations which require both protein and water-soluble accessory to make them support growth Wheat embryo, which is as efficient as milk powder in supplementing such rice rations, can be heated for one hour in an autoclave at 15 pounds pressure without manifesting any deterioration in this respect as does milk Skim milk from which the casein has been removed (whey) can be heated in an autoclave at 15 pounds pressure for one hour without noticeable loss of its nutritive properties It still supplies the water-soluble accessory in active form Whey from which the albumin has been removed by coagulation can be kept at the boiling temperature for six hours without any appreciable loss in its activity so far as the water-soluble accessory is concerned Also lactose which has been heated in an autoclave for one hour at 15 pounds pressure, still behaves as does the unheated product in supplying to rations the water-soluble accessory Heating casein in a moist condition for one hour in an autoclave at 15 pounds pressure destroys its biologic value as a complete protein Heated casein or heated milk powder are shown to have little if any toxicity The deterioration is due to a loss of value of the protein fraction of the ration through changes wrought in the casein

86 **Abderhalden Reaction**—In the experiments recorded by the authors practically every serum, whether from a pregnant or a nonpregnant individual, showed protein digestion when incubated with placenta tissue prepared according to Abderhalden The range of individual variation in proteolytic activity was wide The range covered by most of the normal serum was, however, identical with that covered by the majority of the pregnant serums There is a tendency for the results from the pregnant serums to average somewhat higher than those from the nonpregnant The difference, even in the averages, is not great, however, and the individual variations of both pregnant and nonpregnant serums make the results from both overlap so completely as to render the reaction, even with quantitative technic, absolutely indecisive for either positive or negative diagnosis of pregnancy Further evidence of nonspecificity is seen in the fact that carcinoma tissue was digested to about the same extent as was placenta It appears that nearly all human serums can digest certain coagulated tissue proteins to some extent, but that the source and significance of the proteolytic agents, and the influences that cause their fluctuation, remain undetermined

Journal of Outdoor Life, New York

November XII, No 11 pp 341 370

88 Four Essentials of Sanatorium Treatment S Coolidge, Middleborough, Mass
89 Arrows of Sun E Cummings, Hinton, W Va
90 Two Morality Interludes for Children G M P Baird, Pittsburgh
91 Method of Dealing with Tuberculosis in Public Schools of Toronto, Canada F S Minns, Toronto, Canada

Kentucky Medical Journal, Bowling Green

November XIII, No 12, pp 507 582

92 Legal Status of Physician and Surgeon F Forcht, Jr, Louisville
93 Relation of Physicians to Public, to Each Other and to Patient J W Kincaid, Catlettsburg
94 Plea for Uniformity of Treatment in Undoubtedly Surgical Diseases J G Gaither, Hopkinsville
95 *Pneumonia in Children J Martin, Cynthiana
96 *Lobar Pneumonia B W Wright, Bowling Green
97 Blood Pressure in Diseases of Eye, Ear, Nose and Throat J H Thorpe, Owensboro
98 Hip Joint Disease W L Mosby, Bardwell
99 Puerperal Eclampsia W H Strother, Owensboro
100 Case of Cholelithiasis Simulating Gastric Ulcer C C Turner, Glasgow
101 Why We Should Attend County Medical Meeting E G Thomas Benton
102 Significance of Albumen in Urine J T Dixon, Owensboro

95 and 96 Abstracted in The Journal, October 16, p 1397

Lancet-Clinic, Cincinnati

November 13 CXIV, No 20, pp 425 444

103 Physician His Profession E O Smith, Cincinnati
104 Some Medical Problems F T Murphy, St Louis
105 Conditions of Efficient Research in Dementia Praecox B Holmes, Chicago

Medical Record, New York

November 20 LXXXVIII No 21 pp 857 902

106 *Prognosis in Cardiovascular Diseases T E Satterthwaite New York
107 Clinical Psychology in Its Relation to School and to Social Medicine J V Haberman, New York
108 *Significance of Presence of Acid Fast Bacilli in Feces of Patients Suffering from Joint Disease H Keller and A J Moravek New York
109 Symptomatic Psychosis of Renal Type Report of Two Cases E S Brodsky Westport Conn
110 Subdeltoid Bursitis Report of Cases S Kleinberg New York
111 Inebriate Hospitals Historical Note. T D Crothers, Hartford Conn

106 **Prognosis in Cardiovascular Diseases**—Satterthwaite emphasizes the fact that no matter what the nature, location and extent of a valvular disease the prognosis does not depend so much on the valve affection itself as on the condition of the myocardium Complications must be taken into account Among the most important considerations are the station in life occupied by the patient, his temperament his occupation and his environment The method of treatment has an important bearing on the prognosis Blood pressure has much to do with the prognosis A high blood pressure is a bad sign even in the absence of interstitial nephritis When the high pressure can be relieved by an appropriate dietary, laxatives and suitable medication the danger to life is lessened but even if the pressure has been reduced to the standard for the individual it is still not a guarantee against arterial hemorrhage though the expectation of life is improved In all persons subject to high pressure there is especial danger of cerebral hemorrhage or heart failure, for even if the coronary arteries are not involved increased pressure indicates that the heart is doing more than its normal quantum of work So far as interstitial nephritis is concerned, Satterthwaite says it need not necessarily be a bugbear The most important sign of the approaching end is cardiac weakness that cannot be controlled by ordinary dosage with the group of remedies of which digitalis is the chief The conditions of the arterial system must always be taken into account in making a prognosis

108 **Presence of Acid-Fast Bacilli in Feces**—As a result of their experimental and clinical investigation lasting over a year, Keller and Moravek believe (1) that the acid-fast bacillus found in the feces resisting the decolorization with 25 per cent. nitric acid water solution followed by alcohol (80 per cent) is a tubercle bacillus and nothing else, (2) that the same acid-fast bacillus is viable able to grow on culture media and (3) that when those cultures are injected into guinea-pigs they produce tuberculosis The result of this investigation was as follows Active tuberculosis of joints, 42, tubercle bacilli in feces 30, tubercle bacilli in urine, 2 Cured cases of joint tuberculosis, 6, tubercle bacilli in feces 0, tubercle bacilli in urine, 0 Dubious cases of joint tuberculosis 9 tubercle bacilli in feces 1, tubercle bacilli in urine, 0 Of the dubious cases 3 turned out to be luetic infections 1 was found to be suffering from a gonorrheal arthritis 1 was shown to be an ordinary sprain of the knee joint, 2 cases are still doubtful 1 case was lost sight of The patient in whose feces acid-fast bacilli were found turned out to be suffering from tuberculous (active) arthritis of right hip Control cases, 18 tubercle bacilli in feces 0, tubercle bacilli in urine 0 The above figures show that under normal conditions there are no acid-fast bacilli in the feces also that only in active cases of joint disease are they present in the alvine discharges and not in cured cases and therefore the finding of the acid-fast bacilli in the feces in cases suffering from an active disease of a joint, and no active tuberculosis of any other part of the body is of great significance in reaching a diagnosis in an obscure case

New Jersey Medical Society Journal, Orange

November XII No 11 pp 535 584

112 Bone Grafting and Arthroplasty G H Sexsmith Bayonne.
113 Epilepsy with Special Reference to Heredity D F Weeks Skillman
114 Institutional Care of Epileptics D S Renner, Skillman
115 Palinphrasia in Epilepsy Report of Cases L. F Robinson Skillman
116 Difficulties Attending Treatment of Fractures in Epileptic H M Chandler, Skillman
117 What Dentistry Means to Epileptic R. D Ribble, Skillman
118 What Field Worker Does and What She Finds D L. F Brown, Skillman

New York Medical Journal

November 20 CII No 21 pp 1025 1072

119 Study of Drug Action T J Mays Philadelphia
120 Lymphatic Obstruction A L Benedict, Buffalo
121 Parapsoriasis F Wise, New York
122 Case of Kerion Complicated by an Abscess J Grossman New York
123 Artful Acarus W P Cunningham New York
124 Proliferating Tuberculous Cystitis Report of Three Cases M Laverriere Lyons France
125 Chronic Urethritis Gonorrheal and Postgonorrheal A Strachstein New York
126 Case of Acute Otitis Media in Seventeen Months Old Child C H Smith New York
127 Potassium Permanganate in Examination of Cerebrospinal Fluid A I Rubenstone Philadelphia

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

October 30 II No 2861 pp 629 664

1 Wound Infections and Their Treatment (To be continued) A E Wright
2 Functional Murmurs and Irregularities of Heart. J F Goodhart.
3 Recruit s Heart. A Morison
4 *Effect of Exertion on Circulation J M Macphail
5 *Rapidity of Pulse Dependent on Persistent Disturbance of Vaso motor Mechanism K Boney
6 Escape of Ventricle in Association with Cerebrospinal Fever J D Windle
7 Successful Early Operation in Wound of Small Intestine J H Stephen
8 Some Cases of Head Wounds H H Taylor
9 Manufacture of Aseptic Hospital Furniture. J L. Stretton

4 **Effect of Exertion on Circulation.**—Exertion according to Macphail causes a rise in systolic pulse pressure though a general vasodilatation may nullify this effect There is always a lowering of diastolic pressure In heart disease with failing compensation the fall in diastolic pressure is most pronounced and there is often an almost complete absence of the predicrotic wave pointing to a diminished systolic pulse pressure

5 **Rapidity of Pulse**—Twenty patients examined by Boney when first seen all presented the same general characters—a tired listless expression, fatigue on walking a few yards or after a few simple exercises, and in one or two cases undue shortness of breath after any such slight exertion In no case was any complaint made of pain, palpitation, or other subjective symptom With possibly one exception there was no evidence of dilatation of the heart in any of them None presented signs of hypertrophy In every patient the position of the apex beat was within the nipple line The cardiac impulse was not forcible or heaving in fact in some cases it was so weak as to be difficult of localization The heart sounds were normal in character and correctly spaced Accentuation of the pulmonary second sound was absent and no reduplication was observed No form of irregularity was present.

With regard to the character of the pulse in every patient except one the rate was normal while lying down The volume was good and no irregularity in rate or force could be detected by the finger The tone of the vessel wall appeared good but as a certain number of them showed thickening of the vessel wall (in five of them it was marked although no cardiac hypertrophy was present) it is difficult to generalize about this Blood pressure in the radial measured by a Riva-Rocci manometer varied from 120 mm to 140 mm Hg In no case was there any dicrotism On slowly assuming the erect position in six patients only did the pulse keep within what was considered normal limits In the remaining fourteen the rate was enormously increased in some cases going up to 130 or even 140—in one case to 155 In the six cases to which exception was made on standing up the rate was increased by 15 to 25 beats a minute There was a trace of albumin in one specimen of urine only Other evidence of vasomotor instability was to be found in various circulatory disturbances exhibited in some cases Cold hands and feet, even when warmly wrapped up in bed, were commonly noted, and in two patients flushing of the face was so marked as to be spontaneously remarked on by an independent observer A "tache" could be obtained in two cases Boney believes that everything points to a central lesion of the controlling nervous mechanism

Edinburgh Medical Journal

November, XV, No 5 pp 305 384

10 Dangers of Artificial Pneumothorax H de C Woodcock
11 Roentgenography of Thorax in Children J S Fowler
12 Analysis of Sixteen Cases of Chorea and Motor Tic J E Middlemiss
13 Case of Congenital Desmoid Tumor of Rectus Sheath in Infant. D M Greig
14 Two Cases with Multiple Intracranial Complications of Chronic Suppurative Otitis Media Recovery After Operation J S Fraser and W R Logan

Indian Medical Gazette, Calcutta

October, L No 10, pp 361 400

15 Report of Lady Hardinge Hospital, Brockenhurst, England January 20 to June 15, 1915 F F Perry
16 St John Ambulance Association O St John Moses
17 Treatment of Kala Azar by Tartar Emetic Intravenously and Inunctions of Metallic Antimony L Rogers
18 Treatment of Kala Azar with Tartar Emetic E Muir
19 Outbreaks of Epidemic Dropsy in Mofussil S L Sarkar
20 Cholera Experiences R Bryson
21 New Method of Gastro Enterostomy D John
22 Case of Hydrophobia with Incubation of One Year K K Das

Lancet, London

November 6 II No 4810 pp 1009 1062

23 Wound Infections and Their Treatment (To be continued) A E Wright
24 Nervous Affections of Sixth and Seventh Decades of Life (To be continued) J M Clarke
25 *Experiences in Operative Treatment of Gunshot Injuries of Nerves F Eve and R S Woods
26 *General Surgery of Gunshot Wounds of Nerves W Trotter
27 Cavernous Angeioma in Wall of Left Auricle R, F Manifold
28 Case of Optic Neuritis Following on 'Gassing" G Finch
29 Experiences in Serbia, 1914 to 1915 J T J Morrison

25 **Operative Treatment of Gunshot Injuries of Nerves**—Twenty-eight patients were operated on by Eve of which twenty-one were due to bullet and six to shrapnel or shell wounds As regards the distribution of the lesions, five were injuries of the brachial plexus, eight of the musculospiral nerve, one of the posterior interosseous nerve, five of the ulnar, two of the median and ulner nerves together, and seven of the sciatic or external and internal popliteal nerves In six cases the injured nerve or nerves were completely divided The sciatic nerve was divided three times, the other nerves divided were the median and ulnar together in one case, and the musculospiral and posterior interosseus once each In one instance the sciatic nerve was perforated with incomplete division of the external popliteal portion The period elapsing between the receipt of the wound and the operation was often considerable This period in all but four cases was three months or over, of the remainder the shortest period was seven weeks In the absence of evidence of improvement, and if the electrical reactions indicate a severe injury of the nerve, the authors are of the opinion that an operation should be performed as soon as the condition of the wound permits of its being carried out aseptically

The chief point in the operative treatment of these nerve lesions is to determine whether simply to separate the injured nerve from the surrounding tissues or to resect it, and this is of greater importance owing to the fact that anatomic division is comparatively rare In cases in which doubt exists as to the advisability of resection, an indication of the amount of damage may be sometimes furnished by blunt dissection of the nerve bundles from above into the cicatrix, to ascertain if they are continuous across it

26 **Surgery of Gunshot Wounds of Nerves**—So far as experience seems to show us at present the most important points in the technic of nerve resection, Trotter says, are free excision, exact coaptation, careful insulation, and perfect asepsis Muscular relaxation before and after the operation is, perhaps, equally important

Practitioner, London

September, XCV, No 3 pp 281 448

30 Value of University Training as Professional Asset T C Allbutt
31 How Is Medicine as Profession for Women Affected by War? J Walker
32 Professional Secrecy W A Brend

November, XCV, No 5, pp 589 728

33 An Appeal for More Extended Use of Whole Milk in Artificial Feeding of Infants C W Vining
34 *Gastric Roentgenoscopy in Children L Willox
35 Recent Work in Diseases of Lungs A J Jex Blake.
36 Cerebrospinal Fever T H C Benians
37 *New Operation for Relief of Pruritus Ani I Back
38 Practical Hints on Removal of Tonsils and Adenoids D Guthrie.
39 Value of Blood Examination in Acute Disease J F Rey
40 Some Practical Hints on Removal of Superfluous Hair by Electrolysis L W Bathurst.
41 Tragedy of Glycosuria. K Robertson
42 The Thyroid H R Unwin
43 Three Cases of Gallstones, Rarity of Condition in Trinidad, B W I R Scheult.

34 **Gastric Roentgenoscopy in Children**—Willox found that the shape of the stomach with contents in children is not a fixed one, but presents many differences during the process of digestion, the same stomach may show different forms at different times As a rule, in infants the shape is more or less globular, becoming elongated as the child grows older, so that in many cases in the older children the stomach, when examined immediately after the ingestion of a meal, is somewhat "F" shaped, and has some resemblance to a Dutchman's wooden shoe The foodstuff of which a meal is composed does not in itself seem to have much, if any, effect on gastric motility The important thing is the degree of fluidity of the meal, the more fluid a meal is, the more quickly it will pass through the stomach The stomachs of older children empty quite as quickly, on an average, as those of younger children, if a meal similar in bulk and consistence is given Practically as soon as the meal has been taken, while in others there seems to be a resting stage before peristalsis commences The average time for the stomach to become empty was three and three-quarter hours, and the majority emptied in from three to four hours

37 **Operation for Relief of Pruritus Ani**—Back makes the same incision on each side of the anus, as in Ball's operation, but instead of dissecting up a flap he cuts down into the tissues of the ischiorectal fossa, and divides the inferior hemorrhoidal artery One point in technic Back regards as important—to unite the cut edges with Michel's clips Remove the clips on the fourth day, do not give a purge until the clips have been removed, in order to minimize the risk of infection of the wound

Sei-I-Kwai Medical Journal, Tokyo

October, XXXIV No 10, pp 49 52

44 Treatment of Ulcer of Stomach, Especially of Hemorrhage Y Miura
45 Cure of Syphilis and Its Recurrence K Asahi and G Murasawa
46 Present Conditions of Treatment of Suppurative Meningitis K Kuribayashi
47 *New Treatment of Acute Gonorrheal Epididymitis Y Murata
48 Two Cases of Rat Bite Treated by Salvarsan Z Oda

47 **Treatment of Gonorrheal Epididymitis**—Murata injected 30 gm of calcium salt solution intravenously with success After injection, pain disappeared and no hard induration was left behind

Archives des Maladies du Cœur, etc, Paris

October, VIII, No 10 pp 317 360

49 *The Causes, Direct and Indirect, of Insufficiency of the Heart H Vaquez

49 **Causes of Heart Insufficiency**—Vaquez long article reviews the numerous causes which may modify the circulation beyond the power of the heart to overcome, especially with preexisting organic trouble He cites a few clinical examples to illustrate the various types described Acu

insufficiency after extreme exertion is probably due to acute dilatation The question whether overexertion can bring on acute dilatation is particularly important on account of legislation on workmen's compensation It has been claimed that overexertion entailing acute dilatation merely exaggerates the phenomenon normally induced by ordinary effort Vaquez insists however that this is not the case Physical effort tends rather to reduce than to increase the size of the heart He agrees with Raab that dilatation following physical exertion occurs only when the resisting power of the heart has been weakened by preceding infection or intoxication or an organic lesion When angina pectoris develops suddenly after exertion or cardiac insufficiency such as Da Costa observed in young soldiers of the Civil War or exhaustion of contractility such as Munziger discovered in woodchoppers syphilis or the strain of a military campaign or excessive beer drinking can usually be incriminated Organic lesions in the left heart are particularly liable to acute insufficiency He recently witnessed acute pulmonary edema develop in a young physician with a lesion of the aorta perfectly compensated hitherto, after violent efforts to crank his automobile

Errors in diet are also liable to bring on acute insufficiency of the heart but not by solid food An overhearty meal may cause palpitations and transient discomfort but not actual cardiac insufficiency This however can be induced by drinking large amounts of fluids This is frequently the cause of serious mishaps in persons whose kidneys are not working properly at the time It occurs mostly with mitral lesions and during asystolia Reduction of the intake of fluids is an important factor in the management of such cases and is even more indispensable with generalized lesions of the arterial system or high blood pressure with renal sclerosis The danger from drinking too much fluid is particularly serious in these cases It may entail sudden distention of the heart Until physicians at watering-places learned to caution their patients not to drink too much of the waters acute pulmonary edema was of comparatively frequent occurrence among those drinking glass after glass of the waters

Salt is liable likewise to bring on acute pulmonary edema, especially with both heart and arterial affections as the kidneys are usually more or less impaired in these cases With simple valvular lesions the immoderate use of salt may bring on the cardiac insufficiency more gradually but in time the whole picture is presented This may occur with the patient in bed and not exposed to physical exertion After transient exhaustion of contractility of the left ventricle conditions may right themselves and the kidney eliminate salt as in normal conditions But unless certain of this, the intake of salt should be regulated

Heat and cold are not borne well by persons with unduly high blood pressure Cerebral hemorrhage and acute dilatation of the heart with pulmonary edema are most common and most fatal in the winter in persons with arterial hypertension Extreme heat Turkish baths are liable to elicit the first manifestations of heart disease or bring on fatal aggravation The rapid heart action under the influence of fear or anger imposes extra work on the heart but Vaquez remarks that cases in which emotional factors alone have brought on cardiac insufficiency are quite exceptional He reviews further the extracardiac affections liable to induce insufficiency on the part of the heart In fact he says, there is no organ that may not influence the heart in some way Recent research has shown infiltration of fat in the region of the bundle of His in cases of permanent bradycardia thus confirming the assumption of Adams (1827) and Stokes (1846) that fat deposits might be responsible for the pathologically slow pulse

Archives de Médecine des Enfants, Paris

September XVIII No 9 pp 461 516

50 *Orthostatic Lordotic Intermittent Albuminuria in Children (L albuminurie posturale de l enfance) L. Jeanneret
51 Treatment of Tetanus by Subcutaneous Injections of Antitetanus Serum J Comby

50 **Intermittent Albuminuria in Children Usually Brought on by Keeping Still.**—Jeanneret remarks that Stirling was the first to call attention to intermittent albuminuria in children in connection with the position of the body, and he styled it "postural albuminuria" Jeanneret declares that this is the best name for it, as neither the orthostatic nor the lordotic attitude ever induce it except in the predisposed The extreme lordosis which is induced by Rollier's pillow in heliotherapy of Pott's disease was borne by children at Leysin over long periods without their developing albuminuria Jeanneret has also examined numbers of children with spontaneous extreme lordosis and no albuminuria was observed in them at any time In still further tests he had all the children in the Children's Hospital at Basel lie on Rollier pillows but albuminuria was scarcely ever observed from the extreme lordosis thus induced This was the more remarkable as the children in the hospital were all more or less debilitated On the other hand, 20 per cent of the children in school present intermittent albuminuria Numerous tests were made in different cases One child of 11 had no albumin in bed on a milk diet, none in bed on a mixed diet, none in three hours of extreme lordosis induced with the Rollier cushion, none playing in the garden and none during half an hour standing erect but stepping from leg to leg or otherwise exercising the legs Albumin however appeared in the urine in three minutes after the child stood erect in extreme lordosis and kept perfectly still There was 1 per cent. the third minute, 2 per cent the fifth 3 per cent the fifteenth, and 10 per cent by the thirtieth minute

Further tests confirmed the importance of the factor, keeping still in the genesis of intermittent albuminuria, when this factor was superposed even on moderate lordosis Of the 204 children examined albuminuria could be induced by lordosis alone in only 3 per cent and by a change from the seated to the erect posture (orthostatism) only in 1 3 per cent Both together, the children not keeping still, induced albuminuria only in 1 6 per cent But the combination of lordosis orthostatism and muscular immobility induced more or less albuminuria in 49 per cent The findings in the various groups are listed in detail in twelve tables They show that the restlessness of children responds to a physiologic demand and that children should not be expected to sit still in school The school desk should be arranged to avoid inducing lordosis The "negative" distance between bench and chair gave albuminuria in 34 4 per cent of the children He declares that the "zero distance" is the ideal for desk and bench, thus protecting against malposition of the spine and not inducing albuminuria He explains the anatomic and physiologic conditions with illustrations, which are liable to start the albuminuria when the normal play of muscles and the local circulation are checked in children by keeping motionless

Bulletin de l'Académie de Médecine, Paris

October 5 LXXIV No 40 pp 341 376

52 *Sodium Hypochlorite in Abortive Treatment of Infection of Wounds Carrel Dakin and others
53 * Mumps Plus Epidemic Meningitis (Oreillons et méningite cérébro-spinale) P Sainton and J Bosquet.

October 12 No 41 pp 377-428

54 Formation of Blood Corpuscles from Hematoblasts in Pigeons and Poultry (De la formation du sang sur les cellules vaso formatives des oiseaux) G Hayem
55 *Serotherapy of Acute Poliomyelitis Thirty Two Cases A. Netter
56 Suture of Completely Severed Spinal Cord (Note sur un cas de retour partiel de la motilite volontaire survenu apres suture de la moelle epiniere complètement sectionnee par un eclat d obus—intervention pratiquee 130 jours apres le traumatisme.) Lortat Jacob E Girou and Ferrand

52 **Abortive Treatment of Wounds**—This method of treating wounds has been described in these columns recently, October 2, p 1221 The work issues from the Rockefeller Foundation laboratory and hospital at Compiegne. Carrel states that with it infected wounds were completely sterilized and could be closed like an aseptic wound For this however, the hypochlorite must reach every remotest crevice of the

wound Even when this has not been realized, the infection is considerably diminished by the applications

53 **Mumps and Meningitis**—In the case described, the clinical picture of the mumps was unmistakable when, the seventh day, meningitis developed It was regarded at first as merely the involvement of the meninges in the mumps process, but meningococci were cultivated from the spinal fluid and antimeningitis serum soon cured the patient The fluid drawn by lumbar puncture was nearly clear, which seemed to confirm the assumption that the meningeal symptoms were due to the mumps Certain cases reported as such in the literature must have been in reality cases of the combination of the two diseases

55 **Epidemic Poliomyelitis**—Netter devotes six pages to tabulation of the details of thirty-two cases of epidemic poliomyelitis with the modifications induced by intraspinal serotherapy These and the return of symptoms when it was suspended too soon, demonstrate the efficacy of the measure he reiterates

It not only arrests the progress of the paralysis but makes it retrocede to a complete cure as a rule, on condition that the serotherapy is applied early enough that is from the first to the fourth day of the paralysis The serum was derived from persons who had had the disease within six weeks up to twenty-nine years, the average interval was five years The serum seems to retain its specific properties for more than thirty years He sterilizes the serum by tyndallization, and injects from 5 to 13 c.c into the spinal canal for eight days in succession on the average It is better tolerated by the spinal canal than horse serum but still it evokes an inflammatory reaction, with sometimes transient fever and pains In his 32 cases the cure was complete and rapid in 6, improvement approximating a cure in 3, 7 were very much and 5 considerably improved In 5 others the influence of the serum was questionable, and in 3 no modification was apparent In 7 cases the bulb was involved and these all terminated fatally, as also one other case It is possible that monkey serum may prove to answer for therapeutic purposes, although the disease seems to be more serious in them even than in man, and they are liable to succumb early to it

Paris Médical

V No 14, pp 245 260

57 *Potato Bread in France After the French Revolution (Pain economique pain de pommes de terre pain K) E Maurin
58 Autoregulating Extension Device for Compound Fracture of the Femur L Senlecq
59 *Phenol Treatment of Gas Gangrene Mencière

Nos 15 16 pp 261 304

60 *Orthopedic Surgery for the Wounded A Mouchet
61 Artificial Legs on the Market, Amputation of Half of the Thigh (Etude critique des appareils français pour amputations de cuisse a la partie moyenne) Ducroquet
62 Open Plaster Casts with Extension (Les appareils platres a anses pour le traitement a l ambulance des fractures ouvertes et arthrites suppurees) M Lance
63 Peritoneum Sheath (from Herniotomies) to Isolate Nerves and Tendons L C Bailleul
64 Vocational Training for Crippled Soldiers (De la réadaptation et de la reeducation au travail des blesses et des mutiles de la guerre) Borne
65 Training Crippled Soldiers to Regain Use of Their Limbs (La reeducation des mouvements chez les blesses de guerre) P Kouindjy
66 Repair of the Jaws After Mutilating Wounds of the Face and Jaws (Prothese restauratrice) L Frey

No 17, pp 305 320

67 Exercises for Stiff Joints (La mobilisation applications au traitement des blessures de guerre) H Somen
68 Fulminating Perfringens Septicemia After Small Shell Wound Levy, Cotte and Latarjet
69 Minor Wounds of the Skull (Embarrures et lesions dure meriennes) J Fievez
70 Heliotherapy for the Wounded (Cure de soleil et chirurgie de Guerre) P E Morhardt

57 **Potato Bread**—Maurin quotes from an old French work directions for making bread of half wheat and half potato flour A very palatable bread can be made, he says, by following the directions given, baking small loaves, and using less heat than for ordinary bread This admixture of potato was recommended for reasons of economy during the years of poverty that followed the French revolution

59 **Phenol Treatment of Wounds**—Menciere pours phenol freely into the wound and then rinses it out with alcohol, and is convinced that this heroic measure has saved many men in his charge not only from amputation but has saved lives as well He has seen it arrest gas gangrene already under way and he advocates "phenolization" as a life-saving measure when the wound is deep, soiled and of a bad aspect The phenol works down deeper than other antiseptics After rinsing out the phenol with alcohol, he applies an embalming mixture of 10 gm each of iodoform, guaiacol, eucalyptol and 90 per cent alcohol, with 30 gm Peruvian balsam and 10 c c ether He uses 9 parts phenic acid crystals dissolved by 1 part alcohol—only just enough to liquefy them He fills the wound up with this, and with small tampons works it into all crevices After one minute or a minute and a half in gas gangrene, he rinses it out with alcohol, using three or four liters, and then applies the embalming fluid or the same with ten times the amounts of ether and alcohol

60 **Orthopedic Surgery in War**—This entire number is devoted to orthopedics and protheses for wounded soldiers and training to "uncripple the cripples," that is, to enable them to be self-supporting Each article is profusely illustrated

Presse Médicale Paris

October 25 XXIII No 51 pp 417 424

71 Fractures of the Lower Jaw in War, Anatomic Conditions. L Imbert and P Real
72 Gelose Glucose Lead Culture Medium Differentiates Typhoid and Paratyphoid A and B Bacilli P P Levy and P Vallery Radot

October 28, No 52 pp 425 432

73 Treatment of Psychoneuroses in the Active Army (Psycho nevroses de guerre) Grasset
74 Early Sterilization of Wounds with Superheated Air or Oxygen H L Reverchon, Vignat and Vaucher

Berliner klinische Wochenschrift

October 25, LII, No 43 pp 1105 1128

75 Causes and Cure of Itching (Entstehung und Beseitigung des Juckens) P G Unna Commenced in No 42 Continued
76 *The Viscosity of the Urine C Posner
77 Clinical and Bacteriologic Findings in Dysentery Plus Typhoid (Mischinfektionen von Ruhr and Typhus) M Soldin
78 Infectious Diseases in the Active Army (Meine Kriegserfahrungen uber Infektionskrankheiten) Grundmann To be concluded
79 Roentgen Localization of Foreign Bodies (Zur Methodik der Fremdkorperlokalisation) R Furstenau (Erwiderung) W Salow
80 Medical Aspects of War Historical Sketch (Historisches zur Kriegsmedizin in Frankfurt a M) W Hanauer Commenced in No 42
81 Legal Decisions Affecting Physicians (Aerztliche Rechtsfragen) H Lieske

76 **The Viscosity of the Urine**—Posner remarks that it is a comparatively simple matter to determine the viscosity of the urine in comparison to examining that of the blood Neither sugar nor albumin in the urine seems to affect its viscosity in the least, but the blood corpuscles display a marked tendency in this respect, especially the whites, and tube-casts even more than the blood cells The viscosity increases with the concentration of urine and measures to increase diuresis not only ward off production of concrements by rinsing out the kidney and urinary passages, but have a still further beneficial action by reducing the concentration of the urine The benefit in lithiasis from courses of alkaline mineral waters is explained by the lowering of the viscosity of the urine under their influence

Correspondenz-Blatt fur Schweizer Aerzte, Basel

October 23 XLV, No 43, pp 1345 1376

82 *Extrapleural Pneumolysis Supplemented by Injection of Paraffin Three Cases (3 Falle von extrapleuraler Pneumolyse mit sofortiger Plombierung nach Baer) F Oeri

82 **Pneumolysis Plus Injection of Paraffin**—Oeri has applied in three cases of pulmonary tuberculosis Baer's method of compressing the lung by injection of paraffin The

lung is first detached from all connection with the wall working through the small hole made by partial resection of a rib The pleura is separated with the lung, the pneumolysis thus being done between the costal pleura and the endothoracic fascia over the cavity in the lung The cavity wall is then pushed in to close it up completely and the space left between the costal pleura and the chest wall is filled in with a paraffin mixture which is still kneadable at body temperature The incision is then sutured The aim is practically the same as that of artificially induced pneumothorax but the filling technic can be applied when conditions prevent effectual therapeutic pneumothorax The operation and filling are done under local anesthesia there is too much danger of aspiration of crushed lung tissue for general anesthesia to be used Among the advantages are the exact dosage the limiting of the compression directly to the cavity area and the fact that no repeating is necessary The experiences were all favorable in the three cases reported and Oeri thinks that this should outweigh the theoretical objections to this technic The three cases are described in detail with illustrations One patient was a delicate young woman who for four years had had an apical process with cavity profuse expectoration slight hemorrhage and periods of fever Since the paraffin was injected fifteen months ago she has regained her earning capacity and except for a brief set-back in the winter has been free from fever and almost free from sputum The second patient was a young man with signs of pulmonary tuberculosis since 1909 As the cavity was obliterated and held compressed by the paraffin the drain on his health from the suppuration was arrested and with it the effects of toxic action the fever and the cyanosis subsiding Both lungs had cavities but by obliterating the one large cavity conditions were materially improved and the lung processes have shown no progress during the twenty-one months since In the third case the large cavity was in the lower lobe and had not shown much if any benefit under a year's treatment in a sanatorium The man of 27 was subject to hemorrhages increasing in severity with fever and much expectoration He has now apparently regained his earning capacity and is free from all disturbances No damage seems to have resulted from the filling in any case In each instance an ineffectual attempt had been previously made to induce a pneumothorax.

Münchener medizinische Wochenschrift, Munich

October 19 LXII No 42 pp 1417 1452

83 *Colorimeter in Quantitative Analysis (Ueber kolorimetrische Bestimmungsmethoden die quantitative Bestimmung von Harneiweiss X) W Autenrieth and F Mink
84 *Roentgen Treatment of Venereal Bubo K Kall
85 Slight Hematuria with Sound Kidneys Before Onset of Spasmodic Stage in Four of Five Cases of Whooping Cough. (Befund von Erythrozyten und Erythrozytenzylindern im Harn bei Keuchhusten vor Ausbruch des spasmodischen Stadiums) F Kornmann
86 Swallowed Tooth Plate Ejected under the Influence of Subcutaneous Injection of an Emetic (2 Falle von verschlucktem Gebiss geheilt durch subkutane Apomorphininjektion) Gerstein
87 Progress in the Physics of the Roentgen Rays A Sommerfeld
88 Wounds of the Skull (Richtlinien in der Behandlung der Schadeltangentialschusse) M Wilms. (Ueber den zerebellaren Symptomenkomplex in seiner Bedeutung fur die Beurteilung von Schadelverletzten) K Goldstein
89 Heart Disturbances in Soldiers. (Die Herzkrankheiten und Herzstorungen der Soldaten im Felde) E. Schlesinger
90 Broad Cotton Rings Veiled with Gauze for Open Treatment of Wounds (Offene Wundbehandlung mit Zellstoffmullringen) Lorcher
91 Orthopedic Appliances for the Wounded III (Arbeitsschiene fur Radialislahmung) A Heymann
92 Treatment to Loosen Up and Counteract Cicatricial Contracture (Ueber erweichende Behandlung) J Frankel Commenced in No 41

83 **The Colorimeter for Determination of Albumin in Urine**—In this tenth communication on colorimetry, Autenrieth and Mink give the quantitative findings in regard to the albumin in the urine in eleven cases as tested by various technics With the gravimeter and the colorimeter the figures were respectively 2.812 and 2.86 per thousand 1.16 and 1.15 3.86 and 3.88 2.8 and 2.8 3.22 and 3.43 0.962 and 0.91, 0.392 and 0.35 1.24 and 1.26, 0.424 and 0.47 4.36 and 4.47 2.08 and 2 These figures confirm the precision of the colorimeter technic They give the minute details of their technic as adapted for the general practitioner They refrain from boiling the urine directly, but heat it for five minutes in boiling water A number of minor points are mentioned that facilitate the test

84 **Treatment of Venereal Bubo with Roentgen Rays**—Encouraged by the benefit from roentgenotherapy in tuberculous glandular disease Kall has been applying it in treatment of venereal bubos during the last eighteenth months The results have been so good that he urgently advocates this method in their systematic treatment, especially in the early stages before much inflammation has developed The treatment is more successful before there is suppuration, the pain subsides and the patient is able to go about without disturbances of any kind from this source Even after fluctuation has set in the leukocytes are destroyed by the Roentgen rays and all are apparently absorbed The fluctuation the pain and the redness all disappear, and the infiltration gradually retrogresses but the spot is left pigmented Even indolent syphilitic bubos respond promptly to the Roentgen ray Developed abscesses have to be evacuated with an incision but the secretion ceases and the abscess heals quicker under exposures afterward Doses of 10 or 20 X are ample for the purpose with a 0.5 mm aluminum filter

Wiener klinische Wochenschrift, Vienna

September 30 XXVIII No 39 pp 1049 1072

93 Experiences with Typhus (Flecktyphus) L Detre
94 *Spontaneous Agglutination of Blood Corpuscles in Malaria (Spontane Hamagglutination) R Bigheri
95 The Urochromogen Reaction a Valuable Differential Sign of Typhoid (Die Urochromogen Reaktion Weiss im Harne bei Typhus abdominalis) V Svestka
96 Technic for Production of Bacterial Vaccine (Bakterienimpfstoff Herstellung) O Lowy
97 *Disturbances in Micturition After Getting Chilled (Versuch einer Analyse der Miktionsanomalien nach Erkaltungen) O Schwarz.
98 Detection of Simulation of Deafness by Mouth Reading Exercises (Entlarvung von Taubheit und Schwerhorigkeit Simulierenden) J Kindlmann
99 Emergency Extension Device Made from Four Guns for Fracture of Femur (Ein transportabler Streck Hange Verband für Oberschenkelschussfraktur) H H Schmid

October 7 No 40 pp 1073 1100

100 *Vascular Erythema (Eine bisher nicht beschriebene Dermatose Erythema vasculosum) B Lipschutz.
101 *Contusion of the Abdomen Three Cases N Moro
102 Subcutaneous Granulomas Secondary to Wounds K Wagner
103 Acute Poliomyelitis in Austria (Vorkommen der spinalen Kinderlahmung in Oberösterreich in den Jahren 1909 bis 1913) G Stiefler
104 How Cholera Was Stamped Out in Three Days (Bekampfung der Choleraepidemie im provisorischen Kriegsgefangenenlager zu K S) L. Detre
105 Improvised Pasteboard Splint (Eine Hohlschiene aus Pappendeckel zur Selbstanfertigung geeignet) C Springer

October 12 No 41 pp 1101 1128

106 Bacteriologic Diagnosis of Dysentery C Salus
107 Typhus in Galicia True Typhoid (Zur Frage des Flecktyphus auf dem galizischen Kriegsschauplatze) W Spat
108 Roentgen Localization of Foreign Bodies in the Tissues V F Hess.
109 Harmless Pumpkin Seeds More Effectual Than Male Fern in Treatment of Tapeworm (Ueber Bandwurmkuren) L. Stefanowicz.
110 *Twenty Five Cases of Foreign Bodies in Larynx Trachea or Bronchi K. Kofler Commenced in No 40
111 Experiences While a Prisoner in Russia and During the Escape Through Turkestan R Strisower
112 Prophylaxis of Venereal Disease at Close of the War Brandweiner

94 **Spontaneous Agglutination in Malarial Blood**—Bigheri reports from the Malaria Laboratory at Tucuman (Brazil) that spontaneous agglutination was noted in 158 of 600 malaria cases The test was positive in 56 per cent of the 113 tertian malaria cases and in 55 per cent. of the 55 quartan while it was positive in 63 per cent. of the 103 cases of malaria of the tropical type The findings were also positive in 54 other cases with symptoms of malaria but no parasites to be found in the blood This spontaneous agglutination was noted likewise in puerperal septicemia and also in the pregnant women examined In tuberculosis and

typhoid the response was negative, as in healthy blood The test was made with Ross' drop method, instead of the drop of blood drying evenly, there is clumping of the blood corpuscles in a few seconds if the phenomenon occurs

97 **Disturbances in Micturition After Getting Chilled**—Schwarz has encountered a number of cases of painful or scanty urination or enuresis in soldiers on active service exposed to the vicissitudes of the weather No organic trouble could be discovered, but the jet was exceptionally powerful The painful type of disturbances resembled the dysuria with enlarged prostate, in two cases there was complete retention Analysis of the various cases suggested a probable peripheral infectious nervous affection as the cause of the trouble in some cases This entailed either hypertony of the detrusor nerve, with consequent incessant desires to urinate and forcible expulsion of the urine, or it entailed paresis of the detrusor and depressed sphincter functioning, thus preventing the normal voiding of the bladder

100 **"Vascular Erythema"**—Lipschutz discovered among the soldiers in his charge at Przemysl twenty cases of an acutely developing skin affection which was new to him Red spots appear on the skin resembling the roseola of syphilis, but the minute vessels in the area are extremely dilated and congested This circumscribed erythema lasts from one to several days, it appears mainly on the chest and back, and displays a marked tendency to recur One man related that he had had this affection return again and again during the last few years There was no break in the epithelium, as would have been the case if the efflorescence had been the result of an insect bite The dermatosis, Lipschutz adds, is most certainly not an inflammatory process nor what is generally called a circulatory disturbance

101 **Contusion of the Abdomen**—Moro reports a case of a pseudocyst in the pancreas with recovery after the walls of the cavity had been sutured to the skin to facilitate drainage The operation followed in about a month after the contusion Pains in the pancreas region developed after healing of the fractured ribs and arm The pseudocyst contained 1 5 liters of fluid and continued to secrete profusely for three weeks but recovery was finally complete after cauterization of the fistula In the second case the spleen had been torn across down into the hilus by the contusion and it was removed The muscular defense and the free fluid in the abdominal cavity called for the laparotomy A not long preceding scarlet fever had predisposed the spleen to a rupture as it was nearly twice the normal size and abnormally soft Seven months later the boy was apparently in perfect health but the leukocytes numbered 12 300 and the lymphocytes formed 30 per cent, the eosinophils 16 per cent, showing a certain influence on the blood picture from the lack of the spleen

In the third case there was muscular defense on the right side of the abdomen after the contusion but there were no signs of free fluid and no spontaneous pain except between the shoulders No vomiting, no urinary derangement, and the shock was transient The pulse was normal, but this must be regarded as an abnormally slow pulse as after such a contusion the pulse usually runs up The liver was found crushed and torn, three large and several small pieces having been pried off from the liver by the contusion Suture was impossible and the man died the seventeenth day after presenting jaundice from the second day

110 **Foreign Bodies in the Air Passages**—There was no mortality in the twenty-five cases reported from Chiari's service in the last five years One patient was a young man into whose throat a coin had slipped over five months before There was slight coughing at first, but after that not the slightest disturbance, neither in breathing, speaking or swallowing, smoking or singing A roentgenogram taken the same day showed no trace of the coin and it was supposed to have passed into the stomach Five months later his throat was painted with iodized glycerin several times as he complained of laryngitis, after a few days there was pain on swallowing Roentgenoscopy then revealed the edge of the coin visible between the vocal cords where it had evidently been impacted for nearly six months The first roentgen examination had evidently shown the coin (a *Krone* piece) from the side alone, as a straight line on the median line, and its shadow had been overlooked As there were no further disturbances from its presence, the suspicion of a foreign body was abandoned The patients were seen soon after the foreign body had been aspirated in all but eight cases In one of the latter group a two-teeth piece of a set of false teeth had been in the bronchi for seven years, inducing disturbances ascribed to other causes as the false teeth had been assumed to have passed into the stomach

The foreign bodies were in the right twice as often as in the left bronchus In some of the five cases of a foreign body free in the air passages, it could be heard hitting against the vocal cords In one case the cough was ascribed to recurrence of whooping cough Direct upper bronchoscopy was applied in twenty-four of the cases but in one the swelling of the bean rendered tracheotomy at once imperative The extraction was always found easiest with the patient in the dorsal decubitus, possibly with the upper part of the trunk lowered The suggestion is made that hard smooth foreign bodies, such as glass beads, which it is sometimes so hard to grasp, might drop out of themselves if the patient was under the influence of a general anesthetic and then turned with the head downward Reflex contraction prevents the dropping out of the foreign body when this is done without general anesthesia, but with the muscles relaxed it might be worth a trial before starting on tracheo-bronchoscopy Large quantities of phlegm or pus interfered with the extraction in some of the older cases, this was combated by injection of morphin and lowering the head in some of the cases In one case the tip of the instrument was bent so that it could be introduced into the hole in a bead which kept slipping out of the extracting forceps The patients were not allowed to talk after extraction of the foreign body, to spare the larynx and cold was applied externally to the neck, and the food given was all fluid and cold In five cases tracheotomy became necessary a few hours later, on account of swelling of the mucosa of the subglottic space, and large amounts of secretions were voided through the cannula, after which healing proceeded rapidly Kofler remarks in conclusion that an elliptical shape for the tubes used in tracheobronchoscopy and esophagoscopy permits a much more spacious lumen than a round tube, especially for children The curve of an elliptical tube also permits better inspection of the field

Zentralblatt fur Chirurgie, Leipzig

October 23 XLII No 43 pp 769 784

113 *Apparatus for Extension Permitting, from the First, Passive or Automatic Movements of the Joint (Streckverbandapparat mit passiven Gelenkbewegungen und Streckverbandapparat mit automatischen Gelenkbewegungen) Ansinn
114 *Ekehorn's Operation for Prolapse of the Anus J Becker

113 **Extension Apparatus Permitting Exercise from the First.**—Ansinn states that the stiff knee and atrophied muscles encountered so often after a fractured femur has healed, demonstrate the need for exercising the knee from the start To meet this he has devised an apparatus with a T splint which applies extension to both thigh and leg, leaving the knee free and balanced so that it is easy to raise and lower the part controlling the thigh The attendants can thus exercise the joint from time to time or the patient can do it himself with a rope and pulley, or it can be kept up day and night by connecting the apparatus with a small electric motor In the thirty cases in which he has applied this apparatus to date the effect realized has surpassed the highest anticipations the fracture healing without a trace of ankylosis or muscular atrophy while consolidation was complete exceptionally early

114 **Ekehorn's Operation for Prolapse of the Anus**—The technic for this operation was described in The Journal, June 12, 1909, p 1966 It was devised for children, but Becker was much gratified at the prompt and permanent cure in the man he has treated with it A stout silk thread is passed around the anus, just under the mucosa, the ends drawn up

and tied over the sacrum The thread was left for twenty days the tampon frequently renewed and the thread drawn along each time The aim is to induce an irritation in the passage bored by the curving needle passed around the anus and kept open by the thread The slight irritation causes production of enough cicatricial tissue to hold back the prolapse

Zentralblatt fur Gynäkologie, Leipzig

October 2 XXXIX No 43 pp 747 762

115 *Hirschsprung's Disease Preventing Delivery (Megakolon als Geburtshindernis) R T Jaschke.

115 **Megacolon Impeding Delivery** —The apparently healthy young woman was at the tenth month of her first pregnancy when she applied for relief from obstipation A large tumor was found almost filling the small pelvis, and assumed to be an impacted cervical myoma Under castor oil and enemas the bowels moved daily and the patient seemed in the best health with good appetite When labor set in the child was delivered by cesarean section and the tumor was found to be the sigmoid flexure measuring 60 cm in circumference the entire large intestine enormously distended with thickened walls The patient seemed to be doing well under measures to clear out the megacolon but collapsed the sixth day with symptoms of severe intoxication Necropsy showed ulceration throughout the colon but no peritonitis The suture in the uterus was intact. Notwithstanding the extensive ulceration in the large intestine and the quantities of feces extracted or voided spontaneously no blood had been visible in the stools Jaschke thinks that there must have been some chemical decoloring process at work. Whether the megacolon was congenital or acquired is not known but there was a history of one severe illness in childhood with no movements of the bowels for eight days

Grèce Médicale, Athens

June 1 15 XVII Nos 11 12 pp 21 24 French Supplement to Iatriki Proodos

116 *Typhoid Pyonephrosis P Soubeyran and S N Oeconomos. Concluded in No 13

August September Nos 15 18 pp 29 32

117 *Treatment of Parasyphilitic Affections J Cecikas.

116 **Typhoid Pyonephrosis** —Soubeyran and Oeconomos report the case of a youth of 17 who developed right seropyelonephrosis during convalescence from severe typhoid The kidney was drained with two tubes and conditions apparently righted themselves Three months later however high fever and pyuria alternating with retention compelled nephrectomy The kidney was found distended with pus The walls were so thin and degenerated that the organ looked like a pig bladder full of pus The patient promptly recovered after its removal Records of only six cases of the kind were found in the literature all but one in men The pyonephrosis became manifest the thirteenth day in one of the cases during convalescence in most of the others and from one to several months later in the rest

117 **Treatment of Tabes and Paralysis** —Cecikas relates a few striking cases from his practice to emphasize his statements as to the clinical cure possible in tabes and general paralysis when they are detected early and given vigorous treatment The increasing proportion of mild and abortive types of these affections may be credited he remarks to the more energetic treatment we are now giving syphilis We know he continues that mercury stored in the tissues gets into the circulation again in waves of elimination hence its capricious reappearance in the urine often after prolonged eclipses Secondary lesions refractory during the course of treatment may retrogress during this flux of mercury into the blood and gradually disappear entirely " He says of salvarsan that as it is precipitated by body fluids the greater portion fails to have any action until it gets dissolved again In order to augment the action on the parasites without increasing the toxicity he advocates combining salvarsan, mercury and arsenic. The very gradual elimination of the two latter renders the treatment with the three practically successive even when they are given together The main point in treatment is to suspect possible tabes or paresis in every case of nervous trouble, even mere neurasthenia, insomnia, vertigo or pains and any tendency to weakness or anemia or loss in weight in an old syphilitic The serum should be examined for the Landau and Wassermann reactions and its power to digest brain tissue, and the cerebrospinal fluid should be examined for its albumin and cell content and its power to deviate complement.

Policlinico, Rome

October 24 XXII No 43 pp 1437 1468

118 Purification of Vaccine (Sulla purificazione del vaccino Jenneriano) L. M Spolverini

119 *Gonorrheal Keratosis of the Penis (Cheratosi blenorragica del glande) G C Sanfilippo

119 **Gonorrheal Keratosis** —In the case reported the man was being treated for acute gonorrhea with involvement of one knee when circinated lesions of keratosis developed on the penis commencing around the urinary meatus They were the characteristic gonorrheal horny patches, and all subsided as the gonorrhea yielded to treatment, thus confirming the gonorrheal nature of the affection It was the young man s second experience with gonorrhea after an interval of five years

Riforma Medica, Naples

October 16 XXXI, No 42 pp 1149 1176

120 Technic for Making Antityphoid Vaccine (Alcune norme di tecnica per la preparazione dei vaccini del tipo antitifico Coltivazione dei germi e dosaggio dei vaccini) F Porcelli Titone.

121 Three Day Fever at Naples. C Martelli

October 23 No 43 pp 1177 1204

122 Classification and Treatment of Arrhythmias (Sulla terapia delle cardiopatie I) G Rummo

123 Metabolism of Nitrogen in Exudates (Ricerche cliniche e sperimentali sul metabolismo dell azoto negli essudati) F Alzona Commenced in No 42

Brazil-Medico, Rio de Janeiro

October 2 XXIX No 37 pp 289 296

124 Action of Pyrethrum on Mosquitos A da Costa Lima

October 16 No 38 pp 297 304

125 Brazilian Species of Genus Tetrameres Chplin, 1846 L. Travassos.

126 Urethroscopy in Men A. Pereira To be continued.

Semana Medica, Buenos Aires

August 5 XXII No 31 pp 155 182

127 The Oscillometer in Diagnosis of Mitral Valvular Disease R A Bullrich

128 Encouraging Results with Radium Treatment of Certain Affections of the Middle and Internal Ear (Radiumterapia en algunas afecciones del oido) D J Spinetto

129 The Pulse with Heart Disease. (El pulso en las enfermedades del corazon) E Rodriguez. Concluded in No 32

August 12 No 32 pp 183 210

130 History and Present Status of Serotherapy of Bubonic Plague. J Moreno Concluded in No 34

August 19 No 33 pp 211 238

131 *Severe Poliomyelitis with Recovery Under Injections of Convalescent s Serum G A Alfaro and J M Hitce.

132 Inflatable Girdle to Sustain Sagging Stomach (Ptosis gastrica y cintura neumatica hypsogastrica de Enriquez.) J F M Gomez.

133 Technic for Testing Antitetanus Serum G Tizzoni and P Perrucci

August 26 No 34 pp 239 266

134 Present Status of Arteriosclerosis C P Mayer Commenced in No 32

135 Case Showing Danger of Mistaking Fibroma Under the Mucosa for Retained Scrap of Placenta F A Deluca.

131 **Serotherapy of Acute Poliomyelitis** —Alfaro and Hitce report the case of a 7 months' babe completely paralyzed by the fourth day of acute poliomyelitis, swallowing was difficult and respiration shallow and irregular As the condition was growing worse, 2 c.c. of serum from two children who had had the disease a few months before was injected into the child s spinal canal the seventh day of the disease Improvement was evident and it continued to progress under further daily injection of 1.5 2 or 3 c.c. of the serum all the paralysis subsiding There was no local or general reaction to any of the injections, and a total of 25 c.c. was thus injected

in the course of two weeks The child was soon completely restored They followed Netter's technic The three middle injections were of serum from a young woman with diffuse myelitis, the diagnosis of poliomyelitis proved a mistake in this case.

Russkiy Vrach, Petrograd

XIV, No 36 pp 841 864

136 *War Psychoses A V Gerver Commenced in No 34
137 Indophenol Oxidase in Tissues of Animals, and the Variations Caused by Staphylococcus Infection B I Slevtzoff and L N Chernevsky
138 *Vaccination Against Gaseous Gangrene V I Nedrigailoff
139 *The Method of Rowntree and Geraghty in Functional Diagnosis of Renal Diseases E M Naroditzky
0 *Experimental Infection of Siberian Marmot with Plague During Hibernation N A Gaisky

No 37, pp 865 888

141 Operative Treatment of Hernia B K Finkelstein
142 *Sequestration of the Liver After an Operation for Acute Appendicitis L. G Stukkey
143 Acanthosis Nigricans P S Grigorieff
144 *Tetany Successfully Treated with Parathyroid Extract D M Rossiysky
145 Apraxia S A Liass

136 **Psychoses in the Russian Army, Absence of Alcoholic Insanity**—Gerver divides the war psychoses into three classes To the first belong psychoses arising in persons without any hereditary taint, being caused solely by the war environment and violent emotions resulting from battles To the second class belong psychoses that would develop in ordinary circumstances of peace, but which were prematurely brought on by the war Here belong dementia praecox, manic-depressive insanity, paranoia, paralytic dementia etc To the third class belong traumatic psychoses, caused by wounds and contusions The psychoses of the first category do not differ in any way from the old types, but they may be subdivided into those caused by battles, by trench life and the rear guard psychoses Clinically they belong to the acute mental disorders, amentia and asthenic psychoses Frequently they develop in the form of neurasthenic insanities The specific character of war psychoses of all the three classes consists in the peculiar coloring and the character of the hallucinations, illusions, delusions, and the patient's conduct The contents of the hallucinations and delusions are the experiences of the war life Another feature is depression, followed often by excitement, and confusion of consciousness The character of the battle (artillery infantry bayonet attacks, etc), the duration of the war life at the front, the course of military events (offensive or defensive, victories or defeats), and the general morale of the army determine the larger or smaller proportion of psychoses that develop Gerver further claims that in the present campaign the amount of psychoses is comparatively small, about 1 per thousand, in the previous wars the rate was 2 or 3 per thousand The main cause of the decreased rate is the total absence of alcoholism In the Russo-Japanese War this was responsible for one third of all the psychoses In the present campaign there has not occurred a single case of alcoholic insanity

138 **Vaccine Against Gas Gangrene**—Nedrigailoff offers a rapid method of preparing a vaccine against gaseous gangrene He used as material the exudate from an incised gangrenous ulcer and two pieces of diseased muscles and subcutaneous tissue which were ground in a mortar and placed in a small tube with the fluid, mixed with three times the amount of normal salt solution The corked tube was then thoroughly shaken for ten or fifteen minutes The contents of the tube were then filtered through a small piece of cotton and through a Chamberland or Berkefeld filter Twenty to thirty minutes later a sufficient amount of sterile reddish fluid accumulates ready to use Altogether it takes two hours to prepare the vaccine Another method by heating, can be used in the absence of a Chamberland or Berkefeld candle, but the heating method takes six to eight hours The vaccine prepared by the first method was used on a guinea-pig which received 5 c.c hypodermically, a painful edema developed which disappeared in three days He had no opportunity to use it on men, as in his cases of gas infection death rapidly followed

139 **The Phenolsulphonephthalein Test of Kidney Functioning**—Naroditzky studied this reaction in thirty-seven cases of various renal lesions and in nine subjects with apparently healthy kidneys The test was always made in the morning the reagent having been injected in the upper portions of the gluteal muscles or into the lumbar muscles Twenty to thirty minutes before the injection the patient was given 200 or 400 c.c of water The test dose was 6 mg dissolved in 1 c.c of water The urine should be examined for the presence of the reagent immediately, or not later than two hours after the injection He found that the phenolsulphonephthalein test is a good aid in the diagnosis of functional renal activity even in those cases in which other methods fail, but it is important to determine the amount of the coloring substance eliminated during the first hour This test differentiates between parenchymatous and interstitial forms of nephritis In mixed and parenchymatous nephritis as well as in other renal affections it is possible to determine, to a certain extent, the involvement of the interstitial tissue In acute cases, repeated examinations may reveal improvement in the state of the kidneys Naroditzky also found that with reduced elimination of the phenolsulphonephthalein there is increase of nitrogen in the blood, especially in interstitial nephritis The phenolsulphonephthalein does not indicate a general retention of nitrogen in the blood, only that a part of the nitrogen is retained which is normally voided by the affected kidney Therefore, the power of the kidney to eliminate nitrogen can be easily determined by this test without resorting to complicated and difficult methods of determining the nitrogen rate in the patient's blood

140 **Experimental Inoculation with Plague**—Gaisky infected Siberian marmots with a forty-eight hours old agar culture of bubonic plague bacilli while the animals were in a condition suggesting winter sleep A dose of one-millionth or a tenth of one-millionth of a gram kills them in from ten to twenty-one days, while they are in this hibernating condition Three animals were experimented on with the same dose when they were in deep sleep, and the results were negative It seems, therefore, that in a state of deep winter sleep the marmots are immune against bubonic plague infection

142 **Sequester Cast Off from the Liver**—Stukkey reports an unusual case of acute appendicitis which though operated on twenty-two hours after its clinical onset, became complicated with an abscess and gangrene of a portion of the liver The abscess showed the twenty-first day after the operation and was due to streptococcus infection It was drained, but twenty-four days later a sequester of the liver, 7 cm long and 1 5 to 2 cm wide, was removed through the wound The patient recovered about four months later and is now well

144 **Parathyroid Treatment of Tetany**—Rossiysky reports a case of tetany in a young man successfully treated with hypodermic injections of parathyroid extract Altogether thirty-five injections were made, with 2 c.c. of the extract as a single dose. The subjective condition improved considerably, with complete disappearance of the objective signs (Trousseau, Erb, Chvostek) which were very pronounced before the injections were given No other treatment was administered. Complete recovery followed

Hospitalstidende, Copenhagen

October 20 LVIII, No 42, pp 1075 1102

146 Fatal Intestinal Involvement in Measles in Two Infants (Enteritis ved Morbilli) K. Secher

October 27, No 43, pp 1103 1126

147 Congenital Infrapapillar Atresia of the Duodenum Corrected by Anastomosis N P Ernst
148 Diffusion of Gases in Air in Lungs III (Om Lungeluftblandingers Homogenitet. Fortsatte Undersøgelser) C Sonne

Ugeskrift for Læger, Copenhagen

October 21, LXXVII, No 42, pp 1639 1672

149 Detailed History of Diabetic with Recurring Coma Kept Under Control (Tilfælde af Coma diabeticum Alkalibehandling, Diætbehandling) V Scheel

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THE ECONOMIC WASTE OF SICKNESS AND PREMATURE DEATH*

NORMAN BRIDGE AM, MD
LOS ANGELES

Throughout our years, from youth to age, we are individually prone to miscalculate the economics of our lives We have aspirations and ambitions We would get on in the world We can earn so much It will cost so much for food and shelter, for clothes and warmth, for schooling and for luxuries We must have certain embellishments A watch is an ornament and will usefully mark the time — it will cost one, or a hundred dollars And we must have fine clothes and feathers and jewels, and amusements — we must play as well as work Will our earnings compass all these?

Our calculations are based on the theory that these are all the elements, and that we shall continue to be here and able to work We do not allow that perhaps we may fall sick, and find all our plans go wrong So we provide no surplusage

But we know that the pianist who loses a finger must change his occupation We know that the chief oarsman who has the colic, or has eaten or drank too much, loses the race To the engineman a spell of dizziness may cause a collision of trains, and the fame of a general, and the issue of a battle, may be lost by an attack of headache

The problem is the same for every child The career of your boy is at the mercy of your neighbor's boy who plays with him, and who has a throat diphtheria So he is at the mercy of a slight blow on the back or the hip, which may disable him with joint tuberculosis, and make him a dependent for life instead of a power in the world Or he may have an infected lung, or pleura, that knocks all your calculations awry, that transforms him from one who would lift to one who must lean all his life

In planning our own and our children's lives we usually fail to make any calculation that health may break down, and that the individual may b[illegible] a liability instead of an asset to his family and th
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* Delivered at the Central Presbyterian Church of Rochester, on the occasion of the meeting of the American Public Health A
tion and the annual conference of the Sanitary Officers of the St
New York, Sept 6 1915

in the course of two weeks The child was soon completely restored They followed Netter's technic The three middle injections were of serum from a young woman with diffuse myelitis, the diagnosis of poliomyelitis proved a mistake in this case.

Russkiy Vrach, Petrograd

XIV, No 36, pp 841 864

136 *War Psychoses A V Gerver Commenced in No 34
137 Indophenol Oxidase in Tissues of Animals, and the Variations Caused by Staphylococcus Infection B I Slevtzoff and L N Chernevsky
138 *Vaccination Against Gaseous Gangrene V I Nedrigailoff
139 *The Method of Rowntree and Geraghty in Functional Diagnosis of Renal Diseases E M Naroditzky
0 *Experimental Infection of Siberian Marmot with Plague During Hibernation N A Gaisky

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141 Operative Treatment of Hernia B K Finkelstein
142 *Sequestration of the Liver After an Operation for Acute Appendicitis L G Stukkey
143 Acanthosis Nigricans P S Grigorieff
144 *Tetany Successfully Treated with Parathyroid Extract D M Rossiysky
145 Apraxia S A Liass

136 **Psychoses in the Russian Army, Absence of Alcoholic Insanity**—Gerver divides the war psychoses into three classes To the first belong psychoses arising in persons without any hereditary taint, being caused solely by the war environment and violent emotions resulting from battles To the second class belong psychoses that would develop in ordinary circumstances of peace, but which were prematurely brought on by the war Here belong dementia praecox, manic-depressive insanity, paranoia, paralytic dementia etc To the third class belong traumatic psychoses, caused by wounds and contusions The psychoses of the first category do not differ in any way from the old types, but they may be subdivided into those caused by battles, by trench life and the rear guard psychoses Clinically they belong to the acute mental disorders, amentia and asthenic psychoses Frequently they develop in the form of neurasthenic insanities The specific character of war psychoses of all the three classes consists in the peculiar coloring and the character of the hallucinations, illusions, delusions, and the patient's conduct The contents of the hallucinations and delusions are the experiences of the war life Another feature is depression, followed often by excitement, and confusion of consciousness The character of the battle (artillery infantry, bayonet attacks, etc), the duration of the war life at the front the course of military events (offensive or defensive, victories or defeats), and the general morale of the army determine the larger or smaller proportion of psychoses that develop Gerver further claims that in the present campaign the amount of psychoses is comparatively small, about 1 per thousand, in the previous wars the rate was 2 or 3 per thousand The main cause of the decreased rate is the total absence of alcoholism In the Russo-Japanese War this was responsible for one third of all the psychoses In the present campaign there has not occurred a single case of alcoholic insanity

138 **Vaccine Against Gas Gangrene**—Nedrigailoff offers a rapid method of preparing a vaccine against gaseous gangrene He used as material the exudate from an incised gangrenous ulcer and two pieces of diseased muscles and subcutaneous tissue which were ground in a mortar and placed in a small tube with the fluid, mixed with three times the amount of normal salt solution The corked tube was then thoroughly shaken for ten or fifteen minutes The contents of the tube were then filtered through a small piece of cotton and through a Chamberland or Berkefeld filter Twenty to thirty minutes later a sufficient amount of sterile reddish fluid accumulates ready to use. Altogether it takes two hours to prepare the vaccine Another method by heating, can be used in the absence of a Chamberland or Berkefeld candle, but the heating method takes six to eight hours The vaccine prepared by the first method was used on a guinea-pig which received 5 c.c. hypodermically, a painful edema developed which disappeared in three days He had no opportunity to use it on men, as in his cases of gas infection death rapidly followed

139 **The Phenolsulphonephthalein Test of Kidney Functioning**—Naroditzky studied this reaction in thirty-seven cases of various renal lesions and in nine subjects with apparently healthy kidneys The test was always made in the morning the reagent having been injected in the upper portions of the gluteal muscles or into the lumbar muscles Twenty to thirty minutes before the injection the patient was given 200 or 400 c c of water The test dose was 6 mg dissolved in 1 c c of water The urine should be examined for the presence of the reagent immediately, or not later than two hours after the injection He found that the phenolsulphonephthalein test is a good aid in the diagnosis of functional renal activity even in those cases in which other methods fail, but it is important to determine the amount of the coloring substance eliminated during the first hour This test differentiates between parenchymatous and interstitial forms of nephritis In mixed and parenchymatous nephritis, as well as in other renal affections, it is possible to determine, to a certain extent the involvement of the interstitial tissue In acute cases, repeated examinations may reveal improvement in the state of the kidneys Naroditzky also found that with reduced elimination of the phenolsulphonephthalein there is increase of nitrogen in the blood, especially in interstitial nephritis The phenolsulphonephthalein does not indicate a general retention of nitrogen in the blood, only that a part of the nitrogen is retained which is normally voided by the affected kidney Therefore, the power of the kidney to eliminate nitrogen can be easily determined by this test without resorting to complicated and difficult methods of determining the nitrogen rate in the patient's blood

140 **Experimental Inoculation with Plague**—Gaisky infected Siberian marmots with a forty-eight hours old agar culture of bubonic plague bacilli while the animals were in a condition suggesting winter sleep A dose of one-million th or a tenth of one-millionth of a gram kills them in from ten to twenty-one days, while they are in this hibernating condition Three animals were experimented on with the same dose when they were in deep sleep and the results were negative It seems, therefore, that in a state of deep winter sleep the marmots are immune against bubonic plague infection

142 **Sequester Cast Off from the Liver**—Stukkey reports an unusual case of acute appendicitis which though operated on twenty-two hours after its clinical onset, became complicated with an abscess and gangrene of a portion of the liver The abscess showed the twenty-first day after the operation and was due to streptococcus infection It was drained, but twenty-four days later a sequester of the liver, 7 cm long and 1 5 to 2 cm wide, was removed through the wound The patient recovered about four months later and is now well

144 **Parathyroid Treatment of Tetany**—Rossiysky reports a case of tetany in a young man successfully treated with hypodermic injections of parathyroid extract Altogether thirty-five injections were made, with 2 c c. of the extract as a single dose. The subjective condition improved considerably, with complete disappearance of the objective signs (Trousseau, Erb, Chvostek) which were very pronounced before the injections were given No other treatment was administered Complete recovery followed

Hospitalstidende, Copenhagen

October 20, LVIII, No 42 pp 1075 1102

146 Fatal Intestinal Involvement in Measles in Two Infants (Enteritis ved Morbilli) K. Secher

October 27 No 43, pp 1103 1126

147 Congenital Infrapapillar Atresia of the Duodenum Corrected by Anastomosis N P Ernst
148 Diffusion of Gases in Air in Lungs III (Om Lungeluftblandingers Homogenitet Fortsatte Undersøgelser) C Sonne.

Ugeskrift for Læger, Copenhagen

October 21, LXXVII No 42, pp 1639 1672

149 Detailed History of Diabetic with Recurring Coma Kept Under Control (Tilfælde af Coma diabeticum Alkalibehandling, Diætbehandling) V Scheel

fact is that some people discover methods and resort to them

As people prosper, are more effective, live longer, become rich, educated and refined, the death rate decreases, so does the birth rate Large families come to the few among this class who covet them, or believe, on religious grounds, that they ought to have them, but mainly they come to the poor, simple, uneducated, natural folk who love children and believe that God sends them, and these people are the stalwart ones who are forever rising in the scale of world values, and are becoming the controlling factors of society This class itself degenerates later, and their descendants give place finally to like people as they were at the beginning, and so the wheel revolves

With such percentages of annual increase in population as have been noted, the nations will some day reach the limit of convenient existence Famine, pestilence and war have, in the ages past, kept the race numerically within living bounds With world fellowship and means of transportation increasing, and the increase of land production due to improved agriculture, famines will decrease, with pestilential epidemics coming steadily under more control with a promise of suppression of most of them, the sweeping mortality of plagues is becoming less common When the combined food products of the earth are insufficient for the mouths that are to be fed, what will happen?

Speculation may be unprofitable, but it is a safe guess that the diminishing birth rate will, so far from destroying the race, actually save it in such circumstances Nor will the progressive reduction of births endanger the existence of the race With the refinements and luxury of the many who will live in that far-off time, there will always be more of the humble, simple, clean and physically strong people who will preserve the race from destruction, until the approach of the end of the habitable life of the earth That will be millions of years in the future, and I believe that even then the human race will progressively adjust itself to the oncoming severe conditions, and live ages after we short-sighted people would naturally guess that the last man must die

With increased longevity, life is easier, and easier because of it Life for all the people can be easier only by reason of more substance, that is, less useless expense, less waste of energy This means stable governments, stable and fixed conditions of living, continued through many generations, good public and personal hygiene long continued, constant watchfulness to guard against dangers of all sorts It means in general, peace and plenty Longevity is increased by conservation of the powers of the individual, and the lessening of forced hard work for long periods, especially by women and children It is increased by regular, moderate work, and by wholesome attention, not with soul-breaking intensity, to all the serious problems of life But too much luxury and idleness tend to rather early degeneration of the tissues of the body, and so a shortening of the average longevity

Moral suasion will probably never produce the greatest progress for the betterment of mankind through improved health conditions Nor will the good example of the small minority of excellent people who lead hygienic lives accomplish enough, although it will do much

It is necessary, and will always be necessary, for an endless campaign of education among the people, most of whom are heedless and indifferent to the dangers of accidents and infections, and harm to others Laws and ordinances will be necessary, and their faithful execution more necessary Political effort and agitation must be continued, so that a majority of the people will support all sane health measures The force of law must be felt by the people of all classes, especially the careless and indifferent, to prevent them from making themselves sick, to the public loss, and from endangering their neighbors It is unsafe to live in a community where the moderate precautions of a sane public hygiene can be defied by any man or family with impunity

In the last few decades one European state has signally illustrated this truth During the last few years the length of the average human life has been increasing in Europe as a whole at the rate of nearly seventeen years per century, in Prussia the gain has been at the rate of twenty-seven years Why is this? It is certainly not accident or any one fortuitous circumstance that has done it It is probably due to the frank obedience of the people to the health rules of a forceful government The rules have been formulated by experts for the preservation of the health and lives of the people and all classes have obeyed with hardly a question If there has been a question of the authority of the state in these matters, it has been hushed in a sentiment of loyalty to the Fatherland

America is learning slowly that *government* is an instrument of force, it is learning a better respect for law, especially when the law is for the protection of all the people The old doctrine is passing that every man has a right to do anything he likes, regardless of his neighbors, unless *he* can see that he is doing them some distinct harm The bugbear of paternalism is also passing, and the mass of the people in the most progressive communities will not tolerate the logical results of the notion that there is no need of public hygiene

It is only by a study of well-recorded facts bearing on the public health that we may surely know whether or not we are harming our neighbors Prussia illustrates the effect of militarism, as applied to the preservation of health, and shows the value of *compelling* people to avoid infection, carelessness and excesses that tend to sickness and death

Will better public health, gained by methods that may seem militaristic, develop in the people that sort of vigor and virility that will tend to a martial attitude toward other nations and threaten or produce war? Such a suspicion is groundless, even childish Wars are brought about by human selfishness, jealousy, egoism, suspicion and hate between peoples and rulers of peoples All methods for better health, whether forceful or otherwise, are for the benefit of the nation employing them and tend to peace, never toward war against another nation, unless that nation violates flagrantly the health interests of its neighbors

We have, in this country, done a few things that show that we are becoming awake to the need of public and private hygiene In some of our large cities we have, within a few years, lowered our annual death rate from twenty per thousand of population to fourteen or lower, largely as a result of the most constant watchfulness and insistence on health regulations Here are a few of the measures that have brought down the death rate and raised the average age of the people fact is that some people discover methods and resort to them

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1 By improvement in milk supply in cities and towns, the amount of bad milk sold has been reduced often to less than one tenth of the former figure This gain has been made at the cost of stringent ordinances, constant watchfulness of the milk supply, daily laboratory examinations of the milk, frequent inspections of farms, herds and dairies, and frequent and merciless prosecutions And the struggle goes on for still better hygiene and economic conditions of milk supply — and there is need enough for it Rochester (N Y) is wasting a half million dollars annually in the way her milk is delivered to her people

2 Diphtheria antitoxin, and the almost universal use of it in cases of this disease, has materially lowered the death rate The cost has been a campaign of education of the medical profession and public as to the life-saving value of the measure, the supply of the article free for the poor, the examination of throat specimens at public cost, and the insistence on scrupulosity in the manufacture of antitoxin

3 Improvement in water supply for urban and rural populations, often at enormous expense to the public, has cost strenuous political, educational and social campaigns to induce the governments to vote the appropriations For the effect of this measure on the death records we need only to look at the typhoid mortality of two cities, before and after These are Chicago and Philadelphia, the drainage canal in the former, and the filter plant in the latter

4 The destruction of mosquitoes in the prevention of malaria and yellow fever These fevers have been among the most destructive and expensive in all history It is impossible to compute the annual cost of them to the world before the mosquito discoveries, but it must have been scores of millions The cost of mosquito destruction has been high, but it is a trifle compared with the cost of the diseases they produced The control of plague and cholera constitutes a similar story Like yellow fever, they often occur in epidemics We know their microbic causes, and have learned how to stamp out the epidemics, and, to a degree, how to prevent them Dr Blue, the head of our federal health service, has shown us how these ends are attained, and our Dr Strong, the hero of Mukden, has, in that city with a terrific epidemic of pulmonary plague, accomplished one of the most brilliant feats of control in all history

5 Tenement house inspection and the prevention of overcrowding is a good measure that has met with less popular opposition than many other reforms

6 The regular inspection of schools by medically educated experts eliminates children capable of spreading infection, and helps toward the relief of those handicapped by disorders that are correctible This measure is being adopted by most progressive cities, often in the face of strong and persistent opposition It is subject to few drawbacks, and has been almost free from abuse It is increasingly popular, and ought to be

7 Scientific midwifery among the poor at the hands of selected dispensary physicians and visiting nurses, and instructions to poor and ignorant mothers in the care and feeding of their babies (with free milk, if necessary) By means of these and similar measures, New York City has, within a few years, reduced its death rate among children under one year of age by more than 30 per cent This record will be repeated by many other cities and by the more advanced country regions But it will probably be a long day before we can match New Zealand, which has the lowest infant mortality in the world

The poor people have, of course, accepted these benefits gladly, but the public has required vast argument before voting the needed money With such a record before it, the public is guilty of a flagrant waste of its own substance and of constructive manslaughter, if it refuses to supply the funds

8 Visiting nurses for ordinary sickness, in cities, instructing and helping families that need it, prevent a lot of sickness, and they hasten recovery in many cases, and so cut down the cost of such calamities The governing bodies of cities are usually slow to discover the value of this measure

9 Vaccination against smallpox and typhoid fever That against smallpox, notwithstanding bitter opposition, has for many years been so general that a considerable immunity among the people seems to have been established, and that against typhoid fever will before many years, if we can bring the facts to the knowledge of the people, become very common — with the result that typhoid will become a rare disease in the general community, as it is now in the armies of the enlightened world

10 The pure food and drug laws now in force in this country have contributed to better health among the people, as they have repressed certain forms of unfair dealing and fraud among manufacturers and merchants This reform was bitterly opposed in Congress and the legislatures for many years by certain powerful business interests

11 The regulation and partial suppression of the use of alcohol has cut out a great amount of useless expense to the people, as it has reduced the amount of sickness This is the verdict of the statisticians generally, notwithstanding the contention to the contrary by some good men I believe that no woman has made such contention We have undertaken, by federal law, to suppress the popular use of opium and cocain, except in cases of known and necessitous sickness And public sentiment will not allow this law to be repealed We have made no large attempts at reducing the use of tobacco, except for children Tobacco has been shown to increase the death rate, and the habit is a money-eater Besides being very costly, it is probably the most grotesquely curious habit of the human race, speaking generally, no one ever began the use of tobacco because he, by himself, at first desired it Probably a thousand million dollars annually is spent because of the tobacco habit

12 The fashion for fresh air, outdoor sleeping, and athletics among students and the young generally is a powerful aid to hygiene, and has lessened the death rate Let us pray that the fashion will not change Draughts of fresh air do not cause colds, these are due to some derangement of the body health And all the advantages of a flood of fresh air are gained by a moderate amount of it, if it is kept in motion, hence electric fans and a lesser coal bill are in order

13 Taking some tuberculous patients off the street where they are careless with their sputum, and sending them to proper sanatoriums, not only helps them, but protects the public Thousands of such patients are now in such places, where under watchful care they harm nobody, and have some chance of recovery themselves Hundreds of sanatoriums, state, municipal and private, have been built and are operated at great expense, but the saving of life has much more than

covered the cost The public education as to the dangers from careless spitting has returned more value to the public than the cost of all the sanatoriums But this education is not more than a quarter accomplished The propaganda must be kept up until all the people know and remember the facts

14 The cure of hookworm disease is one of the greatest gains We are amazed that a few cents' worth (less than one day's wage of a laboring man) of a harmless medicine could cure so destructive and costly a disease It is now within the possibilities to make uncinariasis a rare disease, and incapable of wearing out a single patient In Porto Rico 89,000 people were cured at a cost of 54 cents each

Other reforms must follow, and a great and united popular sentiment push forward all such as can minimize the sickness of mankind, so that there shall be a constantly increasing number of people who will escape death until overtaken by the unavoidable degeneration of tissue due to age Even some of these degenerations will doubtless be found preventable or postponable to a later time in life than they usually now occur

Here are a few of the things to hope for

(a) More educated health officers, and more education for them in universities They must be sane people, men and women — certainly women as well as men! — who know how to get along with other people, who can usually get the laws carried out with the least friction, and who respect the rights of the people while loyal to the law who are jealous of the rights of the weak and helpless, and who do not have an excess of official dignity, with projecting elbows Such are people capable of proposing new and better health regulations than we have, and they can convince the majority of their constituents of the necessity of progress, and of the value of the reforms they propose Many health officers, like other public servants, are autocratic, uncompromising and apparently anxious to show and use their authority Neither the cause nor the public good needs such servants People in authority, when obliged to use their power in ways likely to be displeasing to the people affected, should always regret, and act as though they regretted, to use their power with severity — and then use it politely if firmly, and only after persuasion This is the hand within the velvet glove that usually accomplishes the difficult object with thanks rather than execration from the public

(b) Improvement in the hygiene of rural life and rural schools Both are disgracefully below the standard in cities Country life ought to be the healthiest life of all, and country schools can, with only moderate industry, be made as wholesome as any school in the metropolis The movement by two great organizations, the American Medical Association and the National Educational Association, to further this purpose ought to have our hearty encouragement It is a profitable measure and means health and wealth for the whole country It has not kept pace with the progress in the conveniences of country life, such as better roads, automobiles, telephones and free mail delivery The country people are lamentably neglected in the matter of hospital care and expert nursing A few of our states have awakened to the necessity of enabling counties to provide proper hospitals and nurses for rural communities This movement ought to be advanced by every means possible

(c) We should teach early and late the value of keeping the physical body up to normal vigor all the time It wards off sicknesses and helps us to weather them when they are unavoidable, and it often keeps us out of the expensive hands of doctors and nurses Early diagnosis of apparently trifling ailments is important Severe diseases are thereby often prevented This is what the school inspection doctors do for the children In sickness, procrastination is one of the most expensive and dangerous of our indulgences

(d) We need to make a more vigorous campaign against flies, mosquitoes and vermin Swatting the fly is good, but it is a makeshift We must destroy the breeding places of flies and mosquitoes We know the methods of doing this, and it is infinitely cheaper than our burden from the unlimited breeding of these pests But one careless and indifferent family in a neighborhood can furnish breeding places for the flies and mosquitoes for the town, and nothing will do effectively but an ordinance requiring the health officer to declare all such places to be nuisances, and to compel their abatement This, with public sentiment to sustain the officer, would reduce these insects to a trifling inconvenience And one popular and successful movement that could enact such an ordinance and cause its effective enforcement would mean a general interest in public health that is equal to other reforms that would give the community a nation-wide, enviable reputation, and insure the lowest death rate

The importance of body vermin in spreading infectious diseases has been emphasized by recent studies in typhus fever Certain of the warring nations of Europe are profitably carrying out extensive measures for scrubbing the bodies of their soldiers, and disinfecting their clothing by heat

We might profitably increase our facilities for free baths for the poor in cities The bath house might have facilities for heating safely and quickly each bather's clothing while he is in the bath The self-respecting bathers would probably resent the suggestion of vermin in their clothing, but they would not object to the disinfection if told that their clothes might contain tubercle or typhoid bacilli, and that the oven would not harm the garments

(e) We ought to make a larger effort to lessen the spread and havoc of the venereal diseases The economic loss to the nation from them is beyond computation The results are great suffering, disabling complications that are sometimes mortal, blindness, insanity, barrenness, locomotor ataxia, aneurysms, loss of service and other multiplied calamities The list is long and sickening And the diseases are widespread, especially in cities In New York in one year the number of cases was about 4 5 per cent of the whole population

We have done a few things to lessen them a little, mostly working around the edges of the problem, as it were, without attacking it in the direction of its greatest menace We have to some degree banished the promiscuous drinking cup in public places, on railroad trains, and where numbers of people are employed This helps a little, and is a good object lesson in hygiene

We have advised against promiscuous lip kissing, with small result to change a fashion

We have encouraged the use of domestic and toilet facilities that tend to lessen the spread of the diseases

We are, with admirable unanimity, successfully fighting against segregation and official examination of prostitutes. This will remove somewhat the temptation to men and boys toward the dark ways—with a fatuous sense of safety that never exists.

We have reduced somewhat the use of alcoholics, for these have led countless thousands of men and boys to contract these diseases, who otherwise would have had enough caution, self-respect and resolution to avoid exposure to them.

We have begun to get over our cowardice and prudery, and to give a few boys and girls some slight knowledge of sex hygiene, and how to avoid these infections.

We have, by an admirable addition to the principles of medical ethics, unlimbered the tongues and courage of physicians who can and will, better than formerly, protect women known to them to be in danger through expected marriage. The certificates of perfect health before marriage that a few clergymen are demanding will do a little good, but not much, because of accommodating physicians and careless examinations by those unskilled.

Surgeons, in treating these diseases, are more cautious than formerly to avoid infection, by the use of rubber gloves and other devices.

We have seen most of a certain class of doctors shamed against further spreading of that abominable physiologic heresy that the health of any man requires sexual indulgence. Their subsidence has undoubtedly lessened a little the spread of these diseases, as it has lessened the degradation of man.

We are more and more providing quick and efficient hospital and dispensary care for the poor who are overtaken by these infections, for this is humane, and is a protection to the community. Every such patient is a constant menace to the people about him.

Lastly, we are preaching the gospel of a single standard of morality for men and women alike. This is right as well as righteous and will do good as far as it goes, but with a present record of 60 per cent. of syphilitic women, having received the infection from their husbands, it is to be feared that it will not for many years greatly influence the spread of venereal diseases. Not 1 per cent. of syphilitic men receive the infection from their wives.

Probably the most effective means within our power to lessen greatly the spread of these diseases is the general education of the young of both sexes as to their nature, their baneful effects and the way to avoid them. But this measure, clearly the right of every boy and girl to have for their own protection, and much desired by them, is strongly opposed by many good people for reasons that seem to me utterly inadequate and even nonsensical. May the wisdom of these sensitive people, the love of their kind, their respect for essential purity and the rights of the young so increase that they may come to know that whatever knowledge is necessary in order to be healthy and avoid death is proper for young and old alike, and that not forever shall the best youths of our land be allowed by their ignorance to go blindly to their destruction.

(f) Finally, and never to be forgotten, the progress we have made in cutting down the death rate has been due to the results of scientific research during the last few decades. But for this research we would still have a death rate in our cities of twenty to twenty-four per thousand annually instead of fourteen or less. In this progressive work the pathologists of America have had a great part.

The wonderful results so far achieved are a promise of greater yet to come, and tuberculosis, cancer, diabetes, pneumonia and other destroyers of mankind will yet be conquered. The public health weather vane points to more endowment of research, and that is what we most need. The workers are ready, but the public says the endowments are expensive. That is true, but the beneficial results are one hundredfold greater than the cost.

The promise of further reduction in the death rate is in two factors only: the more efficient use of the knowledge which research has already given us, and of the new knowledge which further research is bound to produce. On this progress we pin our faith, in the calm certainty that it will not fail us.

The Auditorium.

PHYSICAL EXAMINATION AND REGENERATION OF EMPLOYEES *

SIDNEY M. McCURDY, M.D.

YOUNGSTOWN, OHIO

The advantage to be gained by industries in this country entering the field of preventive medicine by means of the physical examination of employees depends on the attitude assumed by medical advisers and the captains of our industrial organizations. That the need for the physical examination of the working force of the world is fundamentally sound, and has an economic and humanitarian basis, has been recognized by the medical profession for years. The fear of a few people, and they are often great molders of public opinion, that some industries may abuse the privilege gained by a knowledge of the physical condition of its workingmen is no ground for the denial of its usefulness to all. Industrial organizations are in business and not philanthropy, and therefore are primarily interested in the increased efficiency and the diminished waste, which are due to preventable accidents and sickness. Industry is also humane and is as distressed at inhumane practices as is the individual. Neither the individual, industry, or, in the last analysis, society can afford any unnecessary loss of productivity, or of diminished efficiency due to reparable and preventable physical defects.

For ages the medical profession has been endeavoring to educate the public in the science of preventive medicine, and the public in turn as it has received the education responded by making new laws for the control of public health. Today we hear, knocking at the door, large aggregations of capital, asking that they may be admitted to the portals of preventive medicine, and that they may lend their aid toward stamping out the wastes due to preventable accidents and sickness. Just what industries were real pioneers in the work of the physical examination of employees and to what medical men especial credit is due does not seem to be clearly recorded.

Railroads were among the earliest to engage in this work, but with the avowed purpose of eliminating the unfit, and with no provision for physically regenerating them. I recently read in a report of the Colorado Fuel and Iron Company that many years ago Dr.

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* Read before the Section on Preventive Medicine and Public Health at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

R W Corwin examined at frequent intervals those employees who worked in departments likely to be detrimental to health As the result of an active campaign for the elimination of tuberculosis in Chicago in 1911, many firms under the leadership of Drs Sachs, Mock, Britton, Fiske, Wieland, Lipman and McClelland examined their employees for tuberculosis, and some time since have extended the work to a complete physical examination

Dr I W Clarke of the Norton Company, Worcester, Mass, seems to be a real pioneer, inasmuch as in 1911 he conducted a thorough physical examination of their force and inaugurated a system of repair and subsequent inspection In Europe, according to the U S Bureau of Labor, Statistics Bulletin No 142, only Belgium and England have departments for the medical inspection of employees and those are poorly developed Ohio is the only state in the Union that requires a monthly examination of workers, and it is limited to those working in lead

At the Youngstown Sheet & Tube Co, where I am employed, we have been engaged in this work for sixteen months We feel it our duty to find the physical defects of our employees, that we may repair them when possible, that we may protect our force from communicable disease, and that we may, in so far as we are able, have our men engaged in work suitable to their physical condition Here they can do their work most efficiently and consequently receive a better wage

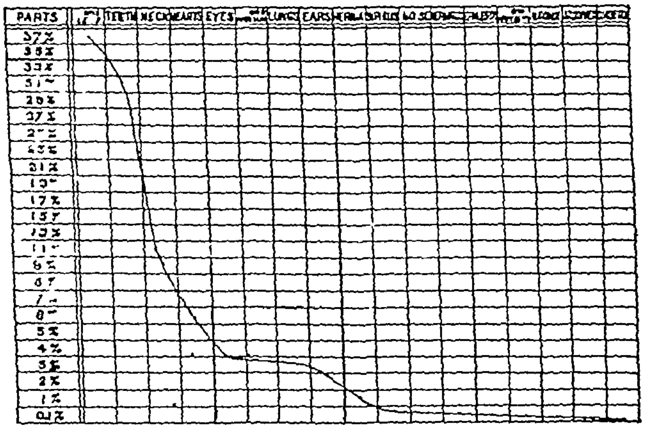

Chart 1—Distribution of physical defects on medical inspection of 5 624 employees

In the conduct of the examining department we have used medical graduates who have devoted their whole time to the company's work Our examiners become familiar with the character of the work done in our various departments, and consequently are better fitted to estimate the relationship between physique and employment Each person examined is obliged to remove his clothing, and careful arrangements are insisted on to preserve modesty and a professional decorum The time consumed in a single case varies from ten minutes in the simple ones to as much time as is necessary for the more difficult examinations All new applicants thus far have been examined, but as our medical force is not yet completed, we have only examined among the old men those returning to work following sickness and injury, and those who work in a department where there might be some likelihood of contracting an occupational disease

It may be that a little knowledge of the character of our industry will help in judging of some of the results that the accompanying charts show We employ about 8,000 men, engaged in the work of making iron and steel and many of their finished products All steel work is known to be very heavy work, often with rather long hours, and associated with hot metals and the problems of high heats In these plants enter many of the difficulties that railroads have in the handling of freight, since a plant is a veritable network of tracks Manifestly, we require a different sort of individual to work here than does an industry filled with lighter burdens This matter has to be daily weighed as we make our physical examinations, and often men must be advised to seek a vocation less arduous

Our examination consists of taking weight and height with a notation of any identification marks

Eyes are examined by the Snellen chart to discover defects of vision All lids are lifted to eliminate the danger of overlooking trachoma Various simple defects of the eye are noted

Ears are examined with the watch only, and the distance of hearing noted

The mouth is explored for defects, such as enlarged tonsils, gumma, new growths, etc, and a physician's description of the condition of the teeth, whether good, fair or bad is made

The neck is palpated for glandular involvement, and any other signs of disease are noted

The bared chest is carefully gone over by auscultation, percussion and palpation, with special effort directed toward tuberculosis and heart lesions Other defects discovered are placed in the record

The abdomen is palpated

The inguinal region is recorded as to hernias, inguinal adenitis and other defects

Penis and scrotum are examined for their local diseases

Extremities are inspected for old injuries, varicose veins, flat feet, etc, and each applicant has his knee jerks tested

Thus far we have taken the systolic and diastolic blood pressure, a urinary examination on all men over 40, and on all cases believed to have definite heart lesions

It may be pertinent to bring up the question that is so often asked "Do not the the men object to such an extensive examination?" I will answer by referring to our statistics which show that only four out of 5,624 men submitted for examination refused In Chart 1 will be found a record of the physical defects that we have found in 5,624 examinations Many of these defects seem too simple to need attention, but it is our continued effort to remedy the most important and as many others as possible Teeth usually head the list, and the neck with its large quota of enlarged cervical glands follows This condition and its ill effects have been taken seriously by at least one concern, the Goodrich Rubber Company of Akron, Ohio, and they have employed full-time dentists to fix the teeth and instruct in oral hygiene Their dentist in 100 examinations could find only two patients whose teeth could be classed as fair Others no doubt, prompted by the excellent work of this company, will found dental departments

The heading Hearts denotes those in which we felt we could demonstrate a definite organic lesion Eyes include mainly those which were trachomatous and of such deficient vision as to require correction Blood pressures represent cases that were in systole above

150 mm or which had an excessive pulse pressure Ears are only classified according to hearing, regardless of cause Syphilis refers to those cases that were able to be demonstrated without blood tests, but from history and physical findings

Our blood pressure findings in men over 40 years were very interesting to us, but from them we do not feel that we have yet gained any knowledge that will help us in suiting the man with high pressure to any given work These pressures were all taken in the sitting position and were on men applying for work, many of whom felt physically fit

We had hoped that some idea could be determined from the systolic, diastolic and pulse ratio as to whether we could expect albumin and casts in the urine The albumin and casts seem to be dependent on other factors, for it was not uncommon to find them in low and medium pressures, as well as to find them absent in pressures over 180 mm Since we realized that the time of existence might be a factor, we have endeavored and succeeded in watching two men at hard labor with pressures of over 200 mm systolic for six months These men are two of the best workmen in a gang of many and seem to feel no ill effect from their high pressure In both of them as yet there has not appeared albumin or casts in the urine

Chart 3 illustrates the anatomic distribution and the percentage of the causes marked in the surrounding circle that we felt necessitated disqualification Eyes, one of the largest causes, were those affected with trachoma, and deficient eyesight that could not be corrected Men having hernias, without a truss or operation, we do not accept Heart lesions represented those that were not fully compensated, as evidenced by the physical findings of the heart, blood pressure and kidneys Men with lung affections were largely refused because of tuberculosis and disease conditions that manifestly were sorely in need of treatment For high blood pressures men were not disqualified unless the systolic pressure was over 180 mm. Many between 150 mm and 180 mm were advised to take treatment and return later, their condition being explained to them

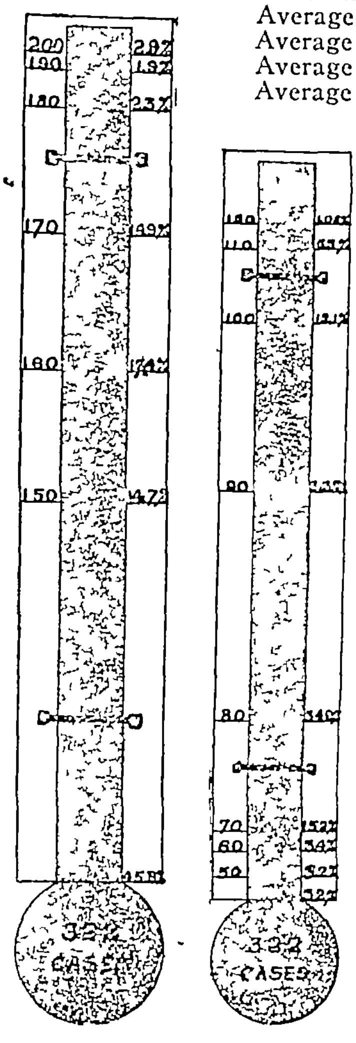

Chart 2 —Graphic representation of blood pressures in 322 men, at left illustrating percentage of height of systolic pressure, at right, diastolic pressures

Chart 4 is the part of the work in which we are particularly interested It shows, now numbering 525, the men that we have kept at work and are observing at least once a month This is the class of case that we are trying to regenerate physically and make into useful and efficient citizens Let us take the eyes first

During the latter part of 1913 it was noticed that there was a large number of trachoma cases in our mills and vicinity After some delay the U S Government was petitioned to make a survey of the village of East Youngstown to see to what extent trachoma existed and to find its cause and remedy The Public Health Service sent to our aid Major J W Schereschewsky, who after an examination of 5,962 of our employees found seventy-six cases of positive trachoma, a percentage of 1 3 He also examined 652 schoolchildren, mostly sons and daughters of the same men, and found that there were ten cases positive, a percentage of 1 53

DATA FROM EXAMINATIONS

Number of cases	322
Average systolic pressure	147 7 mm
Average diastolic pressure	90 2 mm
Average pulse pressure	57 5 mm
Average age	44 2 yrs
Albumin in urine found in	23 6 per cent
Average systolic pressure	163 6 mm
Average diastolic pressure	95 5 mm
Average pulse pressure	68 1 mm
Average age	45 3 yrs
Albumin and heart lesions in	4 36 per cent
Average systolic pressure	162 9 mm
Average diastolic pressure	93 1 mm
Average pulse pressure	69 8 mm
Average age	45 3 yrs

The company immediately opened a hospital for the quarantine and treatment of these cases Drs Hartzell, Biercamp and Goldcamp, eye specialists, were employed to administer the treatment and nurses were hired to assist A sleeping room, loafing room, dining room and kitchen were installed, and a sufficient amount of help to care for them, including a patrolman to enforce quarantine Many were operated in the general hospital at the expense of the company After being improved and removed from the infective class, these men were returned to work and kept under observation During the last year only five cases have recurred and the patients have been obliged to receive further treatment

Acting on the further suggestion of Dr Schereschewsky, the company employed two full-time surgeons, Dr R B Dobbins and myself, who from April, 1914, to April, 1915, examined the eyes of 5,248 applicants for employment and have found twenty-eight positive cases, five recurrent cases, ten cases in persons who had lived in our vicinity less than five days, giving a percentage of 5 against Dr Schereschewsky's 1 3 per cent of the year before

The patients that we found were treated partly at the expense of the company and partly at the expense of the township trustees One point I wish to bring out is that the positive cases in persons who had lived with us less than five days were probably the foci of the twenty-eight cases, and illustrates that trachoma is not limited to East Youngstown, but is in your own city if you look for it A further fact must be noted, and that is that no city or industry can stamp out trachoma without the assistance of all cities and all industries Nevertheless, I am sure that I have positive evidence that some industries engaged in the physical examination of their working men fail to make any effort to discover this disorder

Another class of eye cases under constant supervision are those men with one eye, who for their own protection are required to wear goggles while at work This is accomplished by daily inspection made by the safety inspectors

Hernias ran 2 6 per cent in our examinations, and all examined by us either wear a truss or have been operated on We have ninety-six trusses on men with hernias, and in order to know whether they are wearing these trusses or not, at frequent intervals and without previous warning they are inspected During the last year we have operated on those who desired an operation and now have done twenty-two herniotomies free of charge These hernia patients were in the hospital on an average of eighteen days and returned to their usual occupation at the end of six weeks So far there have been no infections or recurrences Heart and high blood-pressure patients are changed if necessary to work suitable to their condition, treatment given sometimes by us, more often by family physicians, but they are always kept under supervision Lung cases under observation are mainly in those men who show indefinite symptoms of tuberculosis and in whom we are not positive as to diagnosis

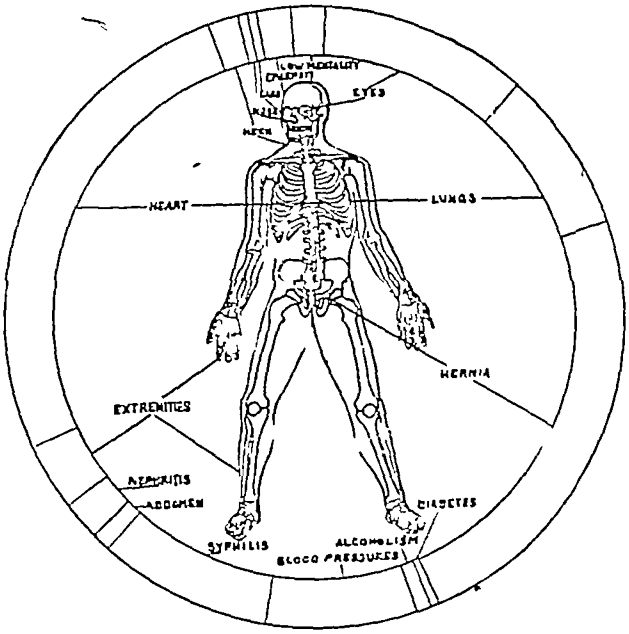

Chart 3—Anatomic distribution of defects that disqualify

Those having tuberculosis are placed in sanatoriums For the nephritics we insist on treatment and make frequent urinary examinations to determine their condition

Our practice of examining men who return to work following an illness, and who are leaving work because of sickness, is an absolute necessity Recently we had its usefulness forcibly demonstrated to us It was our fortune to find early in the day two cases of smallpox These men were immediately sent home and all in their departments were vaccinated In three days and a half without increasing the medical force, Dr Dobbins and myself vaccinated 2,204 men Of this number there were 1,183 fair or good vaccinations, in spite of the fact that many had been previously vaccinated, and to date there have been no infections The result was that smallpox was eliminated from our mills

The Ford Company and others have demonstrated that supervision of sickness in a factory diminishes absenteeism from that cause to a very large extent, and markedly decreases the time lost from work

To properly understand his duty in this work one must have a fairly clear vision of its relation to the individual, the industry and to society An industrial medical expert is engaged not only in the work of preventive medicine, but also in the science of preventive surgery It is just as important to the individual that we do not overload him and cause a hernia as it is to prevent him from acquiring tuberculosis or lead poisoning It is as necessary that we learn the safety limits of fatigue, with its consequences, as to prevent smallpox or other contagious disease We must learn what the human body can safely do, and then ask it to do it The increased efficiency of the laborer betters his condition in ratio to his production and his production depends on his physical condition Certainly a working man has the right to be protected from syphilis, tuberculosis and other infectious and contagious diseases

Surely it is not right to ask a man with heart disease to compete for his living with one with a sound heart It is proper and fair that we, as agents of society, until that day comes when society shall employ some other method to do this work, should endeavor to find these defects and remedy them It has been our desire to relieve all those unfit when we can

In this regenerative work we have tried to eliminate all appearances of paternalism, and a possible result, pauperism We have felt it much better for the afflicted to pay a part or all of the bill required to make him a useful unit of society Many men were required to pay the cost of medical care though the money was loaned them by the company Men in sanatoriums were cared for under this plan, and the cost in general hospitals was paid by the individual Some patients found unable to pay were placed by our medical force, through the various charitable agencies, in the institutions that were suited to their case The net result to the working force is that they are protected from disease while at work, and that if ill, someone is interested in arranging that they may have a chance to become well

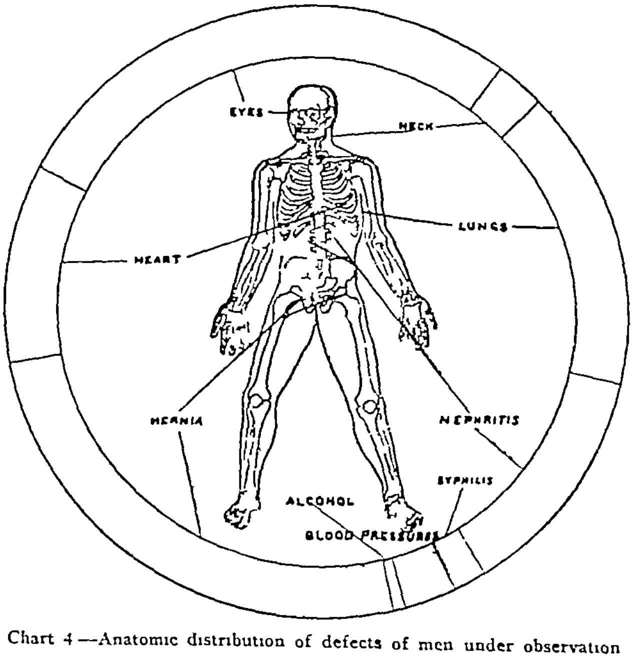

Chart 4—Anatomic distribution of defects of men under observation

Any industry is but an agent of society and has no more right to be extravagant and countenance preventable wastes than has that agent of society which we all recognize, our national government. Preventable loss from work due to sickness and accident is a bill that we all contribute to in the daily cost of living. Grieves estimates that it costs on the average $35 a man in the steel industry to hire and bring him to efficiency. If an industry can keep a constant force by eliminating sickness and accident as far as possible, it may make a greater profit; also the individual does not lose his wage, which he sorely needs, and society does not have to dispense with production which it must have if it is to compete with the progress of the world. Society must profit if there is a decrease in the loss of productivity due to sickness and it must gain if there is a daily increase of productivity due to increased efficiency of healthy workmen. No less valuable is the instruction given those who in the past have been the hardest to reach. In this movement we practically have a compulsory education of adults in the value of preventive medicine, and ultimately all must learn that a healthy body is the greatest asset toward a prosperous life.

A further question is asked, "What is to become of the rejected and unfit?" Economically, the problem is better for society if it can see the cost of the burden of the unfit than if the debt is concealed as we now have it. If any industry pays an employee two dollars and his producing capacity is in reality worth but fifty cents daily, then that industry appears to be giving in charity one dollar and fifty cents. Industries in the last analysis do not pay the loss at all, but somewhere it is charged into the cost of production, and you and I, members of society, pay the loss in our daily cost of living. Without a doubt those reparable should be compelled to improve their physical condition, if possible at their own expense. Those unable to bear the financial burden must be provided for by society, which must expand its facilities for medical work. The bill to the community should be borne by all. I see no better way than state insurance, which makes a man, while well, contribute toward the cost of care for society's infirm. If it is fair for a state to insure us against incapacity due to accidents, it is right that the state or nation should insure us against sickness and incapacity due to old age.

Finally, the solution of this great problem rests in the knowledge that medical men possess, and their opportunity to use that knowledge. Industry is beginning to ask for us and the response, I am sorry to say, is not just what it should be. No medical man can expect to solve these problems if he devotes but a part of his time to this work, and yet that is the sentiment from many in the field. This work is fast becoming a new specialty in medicine, and if one desires to render a big and lasting service to humanity, this branch of preventive medicine offers an opportunity which is not exceeded by any other.

Heredity Versus Environment.—Only by constant selection of the best can any race ever be improved. No education, no environment of any nature, can ever make any appreciable progress even though these same favorable surroundings may produce, through ages, a definite but indefinitely slow increment, which by constant repetition becomes slowly available in heredity, but by no means fixed, so that reproduction, true to the better type, can be depended on.—Luther Burbank.

OCCUPATIONS AND THE VENEREAL DISEASES[*]

WILLIAM F. SNOW, M.D.

NEW YORK

Venereal diseases are, of course, not directly related to occupations, and are therefore in no sense to be considered as occupational diseases. There is ample evidence, however, to prove that the character of certain occupations and the environment of certain industries are important predisposing factors in their spread. Industrial health hazards have been defined as working conditions which, while they may not impair the more resistant worker until after a prolonged period, produce morbid conditions in the average worker, and tend ultimately to create preventable and degenerative diseases in all persons so subjected. These hazards readily fall into several recognized groups—the dusts and chemical irritants, the trade poisons, and the micro-organisms, such as anthrax, which are directly disseminated through industry. Then there are certain diseases, of which tuberculosis is an example, wherein the occupation itself is not so important as the conditions under which it is conducted. Dampness, darkness, devitalized air, physical inactivity, and fatigue are illustrations of such conditions. There are still other groups of hazards which owe their origin to prevailing beliefs among those engaged in various industries, and to the mental depression brought about by the conditions of labor. For example, the common belief that the use of alcohol will counteract the effects of the dust and poison hazards leads to a supplementary hazard known as industrial stimulantism. Similarly unwholesome, insanitary, depressing surroundings combined with lack of ample water supplies encourage excessive use of other stimulants of like character or even of serious habit-forming drugs.

There is increasing evidence in support of recognizing social and moral hazards of industry as well as health hazards. Venereal infections illustrate a group of diseases not directly related to industrial health hazards, but closely related to moral and social hazards of occupation.

Certain industries are so conducted that young men and women are required to associate under conditions calculated to deaden ambition and self-respect, to arouse sex impulses, break down moral protection, preclude marriage, and eliminate home influences, thereby placing a premium on promiscuous sex relations and the contraction of venereal infections. In such ways industry plays a large part in the problem of venereal disease dissemination.

During the past year in the Boston Dispensary 369 new venereal disease patients coming to the evening pay clinic were classified as follows:

Single under 21 years of age	23.5 per cent
Single over 21 years of age	65 per cent
Total single	88.5 per cent
Married under 30 years of age	6 per cent
Married over 30 years of age	5.5 per cent
Total married	11.5 per cent

These patients gave their incomes as:

$10 or less per week	41 + per cent
From $10 to $15 per week	48 + per cent.
From $15 to $20 per week	9 + per cent
Over $20 per week	0.9 per cent

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[*] Read before the Section on Preventive Medicine and Public Health at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

Other facts in the social histories of these men indicated that the majority of them were living in lodgings It is not necessary to picture the environmental and social conditions under which these men live, nor to do more than mention what these conditions mean when combined with a prevailing belief in the so-called sex necessity for men In a sense there is involved here a moral hazard which is comparable to the health hazard described as industrial stimulantism

Venereal diseases are peculiarly a group which do not lend themselves to statistical or etiologic analysis beyond the purely scientific facts of their origin and methods of transmission It will be profitable to summarize here these scientific facts Venereal diseases are communicable parasitic infections due to identified organisms, their methods of transmission are known, and a practical laboratory and clinical technic has been worked out for diagnosing each of them, they are widely prevalent throughout the world and are not limited to any race, sex, age, or condition of people, they find their chief opportunity for dissemination in the sex relations of infected individuals with other individuals who are susceptible, they are not exclusively transmitted through the promiscuous sex relations condemned by society as harmful alike to the health, the morals and the social progress of a people, recent methods of treatment make practicable the shortening of the period of infectivity and improve the chances of ultimate recovery for the individual, once contracted they may run their course to recovery with or without medical assistance, but under present conditions an unknown and very large percentage of those infected never regain their health or never cease to be carriers of either or both syphilis and gonorrhea and therefore a continuous menace to society Various efficiency tests of syphilis and venereal clinics have shown averages of 11 or 12 per cent only of the cases discharged as cured, and high percentages of cases unimproved leaving after one or several visits What this means to the public can perhaps be paralleled by the spectacular outbreak of smallpox which occurred in Montreal in 1887, when the panic stricken inmates of a hospital after exposure to an unrecognized case were permitted to scatter through the city with the result that several thousand persons developed the disease and many died Outbreaks of venereal diseases are not spectacular or sudden, but their insidious spread makes them far more dangerous than smallpox

With these general facts before us, the medical lines of attack are clear 1 We must seek by cooperation with or control of the infected individual to prevent his infecting others 2 We must endeavor by education and administrative measures to enable the uninfected members of society to protect themselves against infection Early diagnosis and ample treatment facilities are essential and ultimately we may expect to see adequate plans developed for promoting personal prophylaxis, chief among which must stand continence Meanwhile, much may be done with the environment, and this brings us back to occupations

In the conditions I have cited we have a series of hazards, whatever their particular designation may be, which need to be eliminated by society Alcohol is one of the hazards which is a connecting link between occupation and venereal diseases through the agency of prostitution Careful investigations of commercialized prostitution in over one hundred cities and towns in the United States has shown that the sale of alcoholic drinks is as much a part of the business as the immoral practices Every large employer of men knows the part played by venereal disease in lowering the efficiency of the company's employees The reports of the United States Navy for 1914 show a total of 141,378 sick days due to venereal disease, or the equivalent of a complete loss of 456 men from service for the year It may be contended that this is not evidence of a true occupation hazard, yet it can be proved that venereal diseases are most prevalent among those persons engaged in occupations which discourage early marriage and home building The recent studies by the U S Public Health Service and by the New York Health Department on venereal diseases among garment workers, peddlers and others illustrate the feasibility of obtaining valuable data on occupation in relation to venereal diseases The report blank for the Ohio State Board of Health's Department of Occupational Diseases includes under the subhead venereal diseases, questions concerning companions, relations of the sexes during work and "moral atmosphere"

The records of a venereal clinic for men in New York examined by Mr Platt during the past year shows the street prostitute to have been the source of infection in 36 6+ per cent, house prostitutes 18 9 per cent, domestics 10 per cent, friends 10 per cent, working women 7 7 per cent, wives 1 5 per cent, and unknown 14 7 per cent of the cases

Restating the lines of warfare on venereal diseases as a menace to industry and to society at large, we find four important points of attack (1) the medical — prevention of spread from known infected persons to others, (2) the educational — instruction of the public in methods of avoiding infection, (3) the environmental — repression of prostitution and safeguarding of industries and recreation from predisposing factors (4) the moral — training the individual in habits of control of sex impulses, and inculcating ideals of marriage and parenthood

In all of this the physicians and the industrial leaders, among both employers and employees, have a part to play Every system of physical examination and treatment of industrial workers has developed facts showing the great importance of syphilis and gonococcus infections in lowering the efficiency of workmen and increasing the public and private expenses due to ill health, moral ills and death

Surgeon Banks of the United States Public Health Service has estimated on the most careful statistics we have in the country that there are at least 2,500,000 cases requiring medical treatment each year in the United States Who are treating these cases? How far are industries responsible for the recruiting of this group?

The purpose of this paper is to stimulate discussion at this session on the importance of considering venereal diseases in relation to industries Many experiments are now on record of industrial corporations starting educational activities in this direction Social hygiene societies and public departments of administration are doing work along new and practical lines The medical profession is awaking to its social responsibility in this field Industrial employers and employees may be confidently counted on to coöperate in practical plans which the medical profession proposes

105 West Fortieth Street

SICKNESS INSURANCE

A PREVENTIVE OF CHARITY PRACTICE *

B S WARREN, M D
Surgeon, U S Public Health Service
WASHINGTON, D C

Industrial hygiene and the health of the people whose daily wage depends so largely on their physical efficiency, have come to constitute one of our most serious industrial problems

Progressive leaders of labor have found that industrial hygiene is common ground on which they can meet capital, and affords excellent opportunity for bettering working conditions

Wise business men are coming to realize this and are giving very serious consideration to the physical fitness of their employees

Health authorities are finding that the total environment of the workers is a more important factor in causing disease than the germs of the infectious diseases, which have heretofore occupied so much of their time

The magnitude of the problem can hardly be comprehended There are approximately 30,000 000 wage earners in the United States Each one of these loses an average of about nine days per year on account of sickness This estimate is based on an investigation made for the U S Commission on Industrial Relations of about 1,000,000 industrial workers in the United States, and nearly coincides with the German and English figures for over 26,000,000 insured wage earners, which show an average of eight to nine days of sickness per year Estimating the daily wage at $2 and the cost of medical services at $1 per day, the annual loss would amount to over $800,000,000 This leaves out of consideration the human suffering and losses due to death and decrease in efficiency which follows illness It also leaves out of consideration the effect on the family when the breadwinner is disabled

When the losses due to sickness come to the families living just above the poverty level, this circumstance causes them to fall below that level These are the conditions which have compelled the partnership between poverty and disease There is no need to tell physicians that sickness increases as the income decreases, that the mortality rate in the poorest sections of a city is often double that of the best sections, that the infant mortality in the families in which the father earns less than $10 per week is three times that in the families in which the father earns $1,200 or more per year,[1] and that the tuberculosis rate is roughly in inverse ratio to the income

There is no question in the mind of the experienced physician that at times poverty is caused by disease, and at times disease is caused by poverty, and that this vicious circle must be broken before disease prevention can make much headway among this group of people Of what use is it for us to tell the tuberculous workingman to stop worrying, get plenty of fresh air, eat fresh eggs and drink milk with plenty of cream, and sleep in a separate room, when the week's wages are already barely sufficient to meet the actual needs of the family The low paid workers are forced to live in unhealthy environment and on a poor diet, which lessen resistance to disease and cause sickness, which in turn results in unemployment, decreased income, demoralization, and dependency

CONDITIONS UNDERLYING THE PROBLEM OF THE WAGE-EARNER'S HEALTH

The causes of sickness are many and ill defined There are causes in the workshop for which the industry is clearly responsible There are home environments for which the workers are responsible There are community conditions for which the public through governmental agencies is responsible But, there are many conditions for which there is a joint responsibility and an overlapping of the fields in which each must share in the other's work for betterment

1 *Conditions for Which the Employer and the Industry are Responsible* —There are so many diseases for which modern industry is beyond all question responsible that space will not be given even to enumerate them here It is only necessary to point out that, outside of the purely occupational diseases like phosphorus, lead, mercury and arsenic poisoning, and those diseases due to working in compressed air and the like, there are many ills which are caused or aggravated "by hours of labor which cause excessive fatigue, by machinery and methods of work and payment which cause nervous strain, and by general sanitary conditions in places of work "

It is therefore obvious that industrial diseases are "morbid results of occupational activity traceable to specific causes and labor conditions, and followed by more or less extended incapacity for work "[2]

The occupational hazard is often obscure, but is clearly developed when careful records are kept of all disease among a large number of workmen in many occupations, as was done by "The Local Sick Benefit Society of Leipzig and Vicinity" for the period 1887-1904 These records showed that the number of days lost per year on account of sickness varied according to occupation from four days for clerks and salesmen to 12 15 for polishers and metal grinders, 12 56 days for iron and steel workers and 14 43 days for refiners in sugar factories

2 *Conditions for Which the Public is Responsible* —The conditions for which the public is primarily responsible are community conditions In times now passed health authorities confined themselves to operating quarantines and the abatement of nuisances, but now under the broadening influence of a clearer knowledge of the causes of disease, they are extending their activities beyond what was originally considered the province of the government At first they went beyond the streets and public places and fixed regulations for proper housing, pure water, pure food, sanitary workshops As working and living conditions have become more complex, the duties of the public have developed until now its regulatory power is extending into the home and shop, and the highest courts of the land are upholding this power, as is seen in decisions affirming the right of the state to limit hours of work and to compel the payment of wages to women which will be sufficient to maintain an adequate and healthful standard of living

3 *Conditions for Which the Employees are Responsible* —With all the conditions for which the public and employers are responsible eliminated, there still remains a large residue for which the employees are

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* Read before the Section on Preventive Medicine and Public Health at the Sixty Sixth Annual Session of the American Medical Association San Francisco, June 1915

[1] Duke, Emma Infant Mortality U S Children's Bureau, p 45

[2] American Labor Legislation Review, 1910, i, No 1, p 125

responsible. In spite of the realization of employers of a larger degree of responsibility for the health of the workers, and in spite of the ever-broadening sphere of public activities to protect the health of all citizens, there remains the individual responsibility for the home environment. It must be stated, however, that the responsibility for their environment does not rest altogether on the workers. No one is able to choose every part of one's environment, and this is especially true of many workers who have little or no choice, but must accept what is offered in the way of employment, and must also accept the home environment for which they can pay with the wages earned. This will continue to be true, especially in the unskilled group, so long as the supply of laborers is greater than the demand and the competition for employment makes it possible for the employer to fix the terms of employment.

The great burden of maintaining proper hygienic standards in the home, after all, rests on the wage earners, who are least able to bear it and who are so often ignorant of their importance. Physicians know, from experience, of the inability of individual wage earners to meet this responsibility, but they are apt to conclude that volunteer welfare workers, relief societies, and charity organizations are providing for the cases which come to their knowledge.

It is necessary, therefore, to point out that recent investigations show that about one half of the native-born families and two thirds of the foreign-born families in the United States had incomes of less than $750 a year. Seventeen per cent. of all native-born and one third of all foreign-born families had incomes of less than $500 a year.[3] These investigations included incomes from all sources and included earnings of wives and children and payments from boarders and lodgers. The inadequacy of these incomes may be measured when it is stated that the consensus of conclusions taken from a number of careful studies of expenditures of workingmen's families show that an average family cannot live for less than $800 to $900 per annum. (The average family is defined as composed of man, wife, and three children under 14 years.) In small cities and towns where rents are lower, the amount required is smaller. But even in these towns a minimum of $700 to $800 may be fixed with the assurance that the amount required is more rather than less.

The adequacy of this standard may be judged by the manner of expenditure, as shown by budgets studied in families living in New England and other Eastern cities, whose incomes averaged about $750 a year, the family being of the average size.

TABLE SHOWING DISTRIBUTION OF FAMILY BUDGET

	Per Cent. of Income	Amount
Food	47	$360
Rent	17	126
Clothing	16	123
Fuel and light	5	41
Health	2	17
Sundries	13	98
Total	100	$765

With an income of $750 a year and an expenditure of $650 a year for the bare necessities of living, the narrow margin is all too apparent. When the numerous necessary sundry expenses are deducted from the margin of $100, there is little left to provide a surplus to meet the expenses of an emergency. No reasonable thrift can save from this small margin a sum sufficient to pay for a death, an additional birth, or unusual sickness.

The question may well be raised as to whether an income of $750 is sufficient for the average family. As to more than half of all the workingmen's families in the United States whose income is less than $750 a year there can be no doubt as to their inability to maintain healthful conditions in the home.

The conclusion is apparent, therefore, that the largest share of the responsibility for the wage-earner's health rests on the workers who cannot carry the load. Society expects these to carry the greatest part of the burden of sickness, when under the best conditions they can barely meet expenses and furthermore they have the least experience in disease prevention. This is expected of them after they are handicapped by an environment which our social organization has for centuries decreed for those who are unskilled or untrained for some trade.

TREND TOWARD COLLECTIVE ACTION AND INSURANCE METHODS

With the responsibility for the wage-earners' health so definitely fixed on the employer, the employee and the public, and with this responsibility so intimately related that the duties often overlap, cooperative action is apparently the best remedy. Collective action is the only method which will enable each group immediately to meet the problem of relief of sickness without greatly increasing the amount now expended for this purpose. If this collective action is further extended into the field of disease prevention, the present cost can be greatly reduced. This is, in fact, the essential principle of sickness insurance.

Insurance is a method by which a group of persons, each in danger of some loss, the incidence of which cannot be foreseen, can distribute the cost of such loss, where it occurs to any of them, over the whole group and lighten the burden of its most serious economic effects. The results are the strongest incentive to lessen the cost by diminishing the frequency of losses. In sickness insurance the employer, the employee and the public pay the premiums for insurance against the loss to which each group is liable in case of sickness of employees. In this way the loss is distributed and a strong incentive created in each group to reduce the cost by preventing sickness. This division of the cost would greatly reduce the amount now spent by employees for sickness, and distributes the payment over such a long period of time that the poorest paid wage earner can meet the expense without materially lowering his present standard of living. Furthermore, it would meet this expense in a businesslike way and leaves no "taint of charity."

While relief of sickness must be the primary object of sickness insurance, prevention of sickness will be the greatest result. There can be little doubt as to this when the results of insurance in other fields are studied. It is only necessary to mention fire insurance and the great effort to prevent fires by building regulations, fire inspections and the like, marine insurance and efforts to prevent losses at sea, and accident insurance and the "Safety First" movement.

The experience with sickness insurance in foreign countries has been such that practically every European country has some form of sickness insurance law, and in those countries with comprehensive laws, the results in stimulating efforts to prevent sickness have been very encouraging It is also a significant fact that no country which has enacted laws on this subject has repealed them, on the contrary, many have extended and strengthened them

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[3] Reports of the U. S. Immigration Commission 1911, xix, 125.

In the United States no state has enacted a law on the subject, but there are several million persons insured against sickness in labor unions, establishment funds, fraternal orders, or commercial companies It is therefore no novelty in this country, but a method which is growing popular, as is shown by the increasing demand

A PRACTICAL PLAN FOR SICKNESS INSURANCE

To meet the requirements for the relief and prevention of sickness in the United States, a sickness insurance law could be enacted by Congress to apply to all industries in all the states, or by the state legislature to apply within the state

An examination of the most successful European governmental systems of sickness insurance and of the principles and methods practiced by mutual benefit societies, trade unions, and industrial establishments in this country suggests that a sickness insurance system, whether state or local, should include the following provisions

1 *Insured Persons*—All persons engaged in gainful occupations and earning a specified annual income ($1,000 or less) should be entitled to the benefits provided under the law

All persons earning more than the specified annual income should be allowed to qualify for the same benefits or greater benefits according to annual income

2 *Funds*—A tentative ratio of contributions has been suggested as follows

Employees	50 per cent
Employers	40 per cent
Government	10 per cent.

Provision should be made for persons earning more than the specified income whereby they could pay a larger proportion of the contributions and receive larger benefits

3 *Benefits*—The following benefits should be provided

Cash Benefits Weekly cash payments to begin after the first week of disability due to sickness, nonindustrial accident, or to child bearing by the beneficiary, for a period not to exceed twenty-six weeks in one fiscal year

Death Benefits Cash payment to legal heirs for death due to sickness or nonindustrial accident

Medical Benefits To include adequate medical and surgical care, beginning with the first day of disability, whether due to sickness, nonindustrial accident, or to child bearing by the beneficiary or the wife of the beneficiary, and limited to a period of twenty-six weeks in one fiscal year unless the time is extended by the commission

4 *Cost*—Preliminary estimates indicate that the total contributions would not need to exceed 50 cents per week per insured person, that is, employee 25 cents, employer 20 cents and government 5 cents, for a minimum of benefits of $7 per week for disability beginning after the first week, $200 for death, and adequate medical and surgical care

5 *Administration*—All matters of promulgation of rules and regulations and appeals should be vested in a commission created for this purpose

Subject to appeal to the commission, all executive authority should be vested in a director appointed for this purpose

Subject to appeal to the director, all medical benefits should be under the supervision of the medical director who should be closely related to the health department

All matters of local administration should be vested in local boards of directors which should be federated according to districts, in order to lower the costs and increase the efficiency of local administration All local and federated bodies should be subject to supervision by the central authorities, and also subject to the rules and regulations promulgated by the commission

The commission and all local and federated boards should be composed of persons representing the contributors to the funds The number representing employees and employers should be in the same ratio as their respective contributions

Provision should be made for free choice of any physician registered on the local panel, and all persons licensed under the laws to practice medicine should be allowed to register on the panels But the number selecting any one physician should be limited

Relation to the Medical Profession—Without adequate medical benefits, both clinical and preventive, the whole plan will prove a failure

These benefits should provide adequate medical and surgical relief, including specialist and dental services, medicines and appliances in home, hospital, or office, as the case may require, for all disability as provided under the law or regulation

To provide these benefits there should be a corps of all-time medical officers and nurses, and local panels of physicians, specialists, dentists and druggists to provide such relief as may be authorized by the annual contract

Corps of All-Time Medical and Health Officers—The officers of the medical corps should be carefully selected, and after a probationary period of satisfactory service, given a life appointment subject to dismissal for inefficiency or immoral conduct

In the federal plan the medical officers should be detailed from the present United States Public Health Service

In the state plan a medical corps should be created along the same plans as the present commissioned corps of the Public Health Service and the state health department reorganized on such plans as would provide an efficient supervision of the medical benefits

The duties of the medical corps under federal or state plan should be to have charge of all hospital and dispensary relief, to examine all insured persons claiming to be disabled, and issue certificates in accordance with the regulations promulgated by the commission, to advise the administrative authorities and all contributors to the funds as to the best measures for the relief and prevention of sickness, to advise with the physicians attending sick members as to measures which will shorten the periods of disability, and to perform such other duties as may be fixed by regulations The corps of nurses should be selected and appointed in the same manner as the medical corps, and should aid the medical corps in all of the duties required of it

The further duty of visiting and nursing disabled members in their homes should be imposed on the nurse corps under the direction of the attending physician or visiting board of the funds, as the case may be, but always under the supervision and approval of the medical corps

Panels of Physicians, Specialists, Dentists and Druggists—In every local or federated jurisdiction, panels of physicians, specialists, dentists, and druggists should be contracted with to furnish adequate services to all insured persons who prefer to be treated in their home or in private office

These contracts should, by preference, be made through the medical societies and all the administrative details left to the societies, but strict provision should be made that any person, licensed under the state laws as competent to perform the services specified, must be allowed to register on the specified panels without regard to the particular school said person may have graduated from

Each insured person should have the privilege of making his own choice of physician from among those registered on the panel for his district This choice should be allowed once each year, or oftener if some good reason is furnished The number choosing the same physician should be limited to such extent as will insure adequate service on the part of the physician

Payment for services should be made on a per capita basis and each physician should receive the same annual amount per patient whether the patient is sick or well At the end of each month or quarter the physician should receive pay in accordance with the number of insured who had selected him

The same methods of capitation payment and selection should be provided for dentists and druggists

This method of payment and selection should prove to be for the best interests of all concerned Those rendering services or selling medicines and appliances should receive the same capitation fee and there would be no incentive to render excessive services or furnish excessive supplies of medicines or appliances in order to increase their income On the other hand, the fact that the patient has the right to change his choice would be incentive sufficient to make those chosen do their best to please.

There will be a further inducement to render efficient service to all patients in the fact that an officer of the medical corps will have to see every disabled member as often as may be necessary to keep informed as to his disability in order to issue the certificate required This double medical examination would not only increase the efficiency of the treatment, but would prevent malingering as it is not apt to be successful under the double examination and observation

Hospitals and Dispensaries—As rapidly as possible local boards of directors should be federated according to the most favorable districts so as to build, buy or contract with hospitals and dispensaries for the care of its disabled members These should be placed in charge of the medical corps and contracts be made for such special services as may be required Any patient should be admitted to hospital or dispensary treatment on the approval of a regular medical officer, but the amount of the capitation paid to any doctor or druggist for any person so admitted should not be reduced because of such admission

Visiting Boards—To further insure that every beneficiary received just treatment and none be allowed benefits to which he is not entitled, provision should be made for the organization of visiting boards composed of insured persons whose duty should be to keep in touch with each disabled member until he has recovered These visiting boards should also keep in touch with the medical officers and visiting nurses on duty in their district.

THE POSSIBILITIES OF SUCH A SYSTEM

Of course, it is borne in mind that a system of sickness insurance such as has been outlined should be evolved through federal or state legislation, or both, and that starting in a limited field it could be gradually extended and perfected But the beginnings of a cooperative governmental system should be made as soon as possible with the object in view that each one of the 30,000 000 workers in the United States should eventually receive adequate medical and surgical care

With adequate financial relief when unemployed on account of sickness, he would be able to take advantage of the treatment before it was too late

There would be funds with which to build or buy hospitals in every federated district These hospitals would be in the reach of all and form part of the benefits to which all would be entitled

The treatment in the homes would have to be of the best, or the patient would be sent to the hospital Minor ailments, many of which now go uncared for because of the expense, would receive prompt attention in office or dispensary Physicians would no doubt institute thorough, periodic examinations of the physical conditions of their clientele, knowing that such examinations would often save their patients from many serious troubles

Visiting nurses and visiting boards would find in homes many conditions which needed correction to save future trouble The all-time medical officers would enter the homes of all sick members and with the trained eye of the sanitarian would find many causes of disease which need correction

Health departments would not have to spend time in lobbying to obtain proper laws and appropriations Instead, business men, on finding that they were paying for much disease that could be prevented, would see to it that the health authorities were efficient and effective in the work of disease prevention

PHYSICIANS ARE NOW HANDICAPPED

At present medical practice in the United States is operating on a most uneconomical and unsocial basis The man on the average income of industrial workers cannot afford to pay the charges for the average sickness expectancy Among these the physicians are practicing against heavy odds

A large number of low-paid wage earners and members of their families constitute the "charity practice" of physicians, and many of them are found in the free hospitals and clinics where physicians give their services free, and many more, too proud to ask for charity treatment, either get no treatment at all, treatment too long delayed, or treatment of dubious value from quacks, "patent medicine" men, druggists, and ignorant midwives

In medical centers large free hospitals are maintained for certain patients called hospital patients, while other patients must go without treatment and many of the hospital patients do not apply for admission because they cannot afford to stop work

Outside of medical centers there are many large areas which have few or no physicians, because the people are too poor to employ them

For the most part, throughout the United States hospital accommodations are far from adequate

The results of this lack of treatment or improper treatment of the poorly paid workers is that many die every year who could be saved, untold numbers become permanently disabled and unable to work their wives become invalids from no care or improper care during confinement, and thousands of their children die within the first year of life from lack of intelligent care, or become blind, or are otherwise handicapped

SICKNESS INSURANCE A HEALTH MEASURE

A governmental system of sickness insurance similar to those in successful operation in Europe will enable the physician to receive pay for his practice and hospital work among low-paid wage-earners, and will allow the patient to receive prompt and proper treatment without forcing him to become a "ward of charity" It will strengthen the economic independence of the worker and at the same time greatly increase and stabilize the income of the physician as well as enable the medical profession to carry on a more effective preventive work

The waste from disability and death due to preventable disease is so tremendous that estimates mean nothing to the average mind The suffering and sorrow due to these causes should be sufficient argument for a sickness insurance law which will place adequate medical relief within the reach of all and provide for preventive measures on a broad and comprehensive plan in which there will be a financial incentive for employers, employees, physicians, and the community to prevent sickness Such a law would prove to be the greatest public-health measure ever enacted

DISCUSSION

ON PAPERS OF DRS MCCURDY, SNOW AND WARREN

Mr Frederick L Hoffman, Newark, N J Any plan of national or state sickness insurance is and ever will be primarily a medical question It matters very little as to how the end is achieved to those who are or will be the beneficiaries of the plan It matters very little whether it is done by insurance, or whether it is done through the taxing power of the state I believe that those who are responsible for the English national insurance scheme, if they could have their way and go over the ground again, would not call it an insurance scheme at all, but a national public health service If we are really sound in our democracy, that the interest of every individual is a matter of government concern, as regards health and longevity, strength and efficiency, then I believe it goes without saying that sooner or later we shall adopt a rational and effective method to carry such an idea as that of Dr Warren and others into effect At the present time an enormous amount of ill health exists in the community in that latent incipient form, when there is the greatest reluctance to seek advice, although there is then the greatest possibility of real prevention and of genuine cure That reluctance is, of course, due largely, if not entirely, to economic reasons—to the unwillingness or the inability on the part of a large number of wage earners (and with these we are chiefly concerned) and their dependents, to incur the initial expense It has been said—and I believe it is true—that the majority of our wage workers have not a single week's wages ahead Now, if that is true, and if that amounts to $10 or $15, you can see how narrow the margin is between economic dependence and economic independence If the state, or if insurance companies and societies, can induce the wage earner, however, to set aside a very small portion of his wages, so small that he would not feel it at all, that amount stretched over the course of his life and accumulated at compound interest will, broadly speaking, prove fully sufficient to provide for him and his dependents adequate medical treatment, adequate surgical treatment, adequate medical inspection, and other means for the prevention of illness as well as its cure Unfortunately, whenever you approach a wage earner with so remote a contingency as sickness (for it is remote, broadly speaking, in the life of the large majority of that proportion of our wage earners who are mostly under 30 years of age), they are, as a rule, unwilling to make that present, though small, pecuniary sacrifice, and in the European countries, at least, compulsion has been the only alternative to a really universal and thoroughly effective system of what we call social insurance, but what really amounts to a system of state medicine They call it insurance, but nothing is insurance in the true sense that rests on compulsion, on the one hand, and on a state or an employer's contribution, on the other It is simply a modified form of taxation, and if we are going to have anything of that sort in this country, we must face it from that point of view I should like to leave that thought with you, for it is of the utmost importance that there should be no confusion of terms

Dr George M Kober, Washington, D C The importance of the subject of industrial sanitation must be apparent when it is remembered that probably more than one third of the population in this country constitute our working classes Health is the chief asset of the working man, and no greater calamity can befall him than when, by reason of sickness or accident, his earning capacity ceases It means in many instances the utter financial ruin of the family and is doubtless one of the most potent causes of poverty and distress An appeal has been made by Dr McCurdy for an enlightened and humane interest in this important and much neglected subject There has been need for it ever since the mechanical industries sprang into existence, and it is much to our shame that we have been so tardy to realize the imperative need for active preventive work in connection with industrial diseases and accidents I certainly hope that the papers that have been presented will make a deep and lasting impression, and enroll into the ranks of workers in industrial sanitation a large number of able and faithful and intelligent men and women for the prevention of needless suffering and distress I merely want to point out that of the 143,000 deaths from tuberculosis which were recorded in the census of 1913, probably more than one half belong to the industrial workers, and it has been estimated that fully one half of all these lives could have been saved by the enactment and enforcement of laws for the prevention and removal of dust and fumes, which constitute the foes of industrial life That is only one of the many instances that can be cited in favor of active preventive measures Time does not permit me to speak of many other factors connected with this great problem, such as industrial poisons, fatigue from overwork and long hours, the question of temperature and atmospheric conditions One of the most important conditions is reasonable hours of work How can we expect men to work day after day and month after month and year after year without wearing themselves out, as long as the hours amount to ten, eleven and twelve as we very frequently find in our steel plants, where they are exposed not only to extreme, hard physical work, but also to excessive heat and other avoidable conditions detrimental to health and life?

Dr R W Corwin, Pueblo, Colo Our work must extend further than examination of the man in the mill His home surroundings should be considered If possible he should be freed from anxiety, insanitary and unhygienic conditions

Our attention should be called also to the matter of education Not only should the employee be instructed, but those above him in authority The doctor learns new prophylactic facts every day All others may do the same.

We hear much regarding the use and abuse of tobacco and liquor No person in authority can ask one under him not to do what he himself indulges in One cannot expect of his assistants more than he is willing to do himself

Dr G H Richardson, San Francisco For the past two or three years, as a member of the Commonwealth Club of this city, I have been studying the various phases of social insurance, and have become very much interested in this subject, particularly as it relates to our profession I want to bring out one point that was brought to my mind by Dr McCurdy's paper on the physical examination of employees I examine for the Civil Service Commission of San Francisco and of course make a large number of rejections, but I have kept no record of these rejections All over the United States these examinations are being made, and it would be of great service to compile these rejections The statistics would, I am sure, be of some service to this section The same thing I know exists in the recruiting depots of the army, the navy and of the marine service We have no easy way of knowing the character of the defects giving rise to their rejections, the proportion of men rejected, or most important of all, the ultimate result of these defects on the earning capacity of the individual It would seem that if they were collected by this section in some proper manner, it would be of value to us in this work The dark war cloud that now rests over Europe will practically socialize that continent It is going to make poverty such as the world has never seen, and in consequence the various countries will have to tax themselves, probably by some form of compulsory insurance, to care for their great dependent populations We must expect that this transition in economic life will affect conditions in the United States, and we as medical men should study and prepare ourselves for the wonderful change it will make on our profession as a means of livelihood and also on our relations to the sick and injured of our community

Dr G H Taubles, San Francisco With reference to the paper of Dr Snow, one of the strong things brought up but not elaborated was the instance of enormous numbers of girls living under most distressing conditions, and, on the other hand, the statistics of men infected with venereal diseases, most of them unmarried I think that this is the age of the awakening of the civic conscience, and this condition is one that requires readjustment The mass of people cannot be deprived of their biologic heritage by the isolation of large numbers under unsuited conditions, causing many of those women to pass through their lives without ever having completed their functions of motherhood, by ruining so many of these men so that they never will have completed their functions of fatherhood This thing in time must have a serious effect on the entire population The hopeful thing is that such a section as that of preventive medicine has sprung into existence, and it is from the social aspect that preventive medicine will have its strongest effect That readjustment must take place and the reestablishment of human beings as biologic functioning organisms must take place, and that is social This is going to be emphasized, particularly at this time, in view of the enormous destruction of life occurring in Europe, and the problem will be presented to us in the United States from the point of view of immigration We will have many hundreds of thousands of people to take care of directly, and hundreds of thousands to take care of indirectly The United States has always sent a great portion of its natural products to other continents This will be more than ever the case in the next decades

Dr. W C Rucker, Washington, D C Dr McCurdy spoke of the question of overloading the human machine Years ago the reports of the Marine Hospital Service were filled with references to aneurysm among sailors, which was then very common Nowadays aneurysms are almost never found among sailors This is coincident with the substitution of gasoline and steam power on ships in place of man power for the purpose of hoisting sails moving boats, warping in vessels and everything of the kind I believe this has reduced aneurysm among sailors, and that what applies to this one craft applies to all others

With regard to the examination of applicants for positions, on two occasions I have been entrusted with the employment of large numbers of men, and, like everyone who has done this sort of work, I have observed the very close relation between the physical and mental development of men, but there is a type of men physically sound and apparently fairly sound mentally who nevertheless have a mental strabismus In the employment of men, the exclusion of such applicants is most important They are invariably trouble makers, a danger to fellow workers and cost a great deal more than they are worth The simple test of the imagination is one of the best tests for the exclusion of these men, as they invariably have a disordered imagination If you present to them a sudden emergency requiring the exercise of the imagination you will be surprised at the queer and eccentric answers you will get, and whenever you find men with these queer imaginations it is not wise to employ them For the common laborer, the man who is supposed to bring a little brain and a great deal of muscle to his job, a blot makes a very good imagination test Simply take your pen and put some ink on a piece of paper, fold it and unfold it again, and, pointing to the blot, say to the man, "What does it make you think of?" That sounds like an idiotic test, but it is really a sensible test for these men They will display emotional characteristics under this stimulus to their imagination Here is a blot that looks to a normal eye like a cloud, and the man is apt to say, "Oh that looks like a brainstorm Take it away"—something like that You will find it a good test

I have told these things to bring out the importance of the test of the mental condition of workmen, of which nothing was said in the papers The importance of such a test is illustrated by the case of a man, employed as a boatman running a small gasoline craft, who suddenly began to hit things, bumping into the wharf and injuring his boat His friends and his employers noticed it, but paid little attention to it Within a year he had general paresis

A good many railroad accidents have been due to the fact that the men were in the stages of mental deterioration I think in our routine physical examination of employees we should pay great attention to their mental condition

Dr. Leo Munter, San Francisco The proposition of sickness and accident insurance I believe to be dangerous and bad The matter of industrial insurance as we have it in San Francisco has proved to be a bad proposition At the time when the insurance act first went into effect there were compacts made between physicians of San Francisco and various parts of the state with the insurance companies, whereby the physician was to furnish his services at a minimum fee The argument was made that industrial insurance was to protect a class of men who were making small wages, who were not earning sufficient to protect themselves in case of accident, and for that reason the medical men were asked to make their fees as low as possible The argument was also made by the insurance companies and by the industrial accident commission that as we ordinarily charged low fees to these men, we should not charge the insurance companies larger fees for the services rendered As a result, the association of insurance companies adopted a schedule, which was all the way from 50 to 60 per cent lower than the regular fees that had been charged for medical services A great many physicians were requested to sign this schedule and pledge themselves to work for these fees A great many physicians of San Francisco, to my own personal knowledge, did sign this schedule and agreed to do the work for this minimum fee At a meeting of the State Medical Society a fee schedule was adopted which was to be ratified by the various county societies, and which was rejected by various county societies In San Francisco a mass meeting was held which resulted in a protest against binding ourselves to work for low wages As a result of this protest, the insurance companies have taken it on themselves to dictate who the physician shall be who shall treat the injured employees They have employed physicians at certain reduced fees, and have made contracts with physicians who would still further reduce their fees by giving a rebate of 25 to 30 per cent off of the schedule which had already been reduced 50 to 60 per cent

Dr. Mary Lawson Neff, Phoenix, Ariz I have been asked to speak on the psychologic aspect of the question I examined in Los Angeles a few days ago with Dr Allen a man, a jitney-bus driver, who had been arrested for charging at full speed into another automobile He proved to be a paretic, and from time to time in different clinics I have seen many such cases I believe if we collected them we would find an immense number of industrial accidents due to mental and nervous diseases I think also the question of mental defect should be given attention The high-grade mental defective is not recognizable except by a mental examination and not always then, but a great many mentally defective people find their way into industrial positions that they are quite unfit for The high-grade defective, for instance, is quite capable of working in a gang under a good foreman, but is incapable of working independently, and his right placing would depend on the proper psychologic examination, rather than the physical, that is, there are special defects that should be made the subject matter of psychologic work. For instance, a person with a "left hand lag" ought not to attempt to be a stenographer The person who is "ear-minded" is unsuitable for a telephone operator where a flash light signal is what she has to depend on for her work So it seems to me that there is a large field for the psychologist—the psychologist with common sense—in this department

Dr. Otto P Geier, Cincinnati I believe that this sort of work if well done in industry is going to stimulate the general practitioner to better work, more accurate diagnosis I find that we are continually coming across, as Dr McCurdy does, the mistakes and oversights in diagnosis on the part of the general practitioner, and after a while, when enough of this work has been done, it is going to become a very uncomfortable thing for the general practitioner to remain so slovenly in his diagnosis, and have his families find out from the industrial physician that he does not know his business It might surprise you to know that there have come before me, with only 1,000 men, three cases of appendicitis within the last six weeks, and two cases of tuberculosis. Those conditions we discover by virtue of the fact that medical inspection is insisted on, and because these men come freely to consult me just as they did their private physicians.

That matter then of the jacking up of the family physician, and making the general practitioner do less slovenly diagnostic work, I think, is going to be of some value

It is also going to help the man who is interested in public health work If he is interested in a larger budget for the health department, he should be interested in this thing, because if the people seize the idea that it pays to be healthy, they are going to see to it that the public bodies give the public health department more money In that way it is going to stimulate better health conditions in our cities

It is a question whether industries should undertake to do surgical work and medical service for its employees such as suggested by Dr McCurdy, because I think there is a little danger of pauperization, and I think we should steer very clear of this danger That of course should take care of itself by the inquiry into every man's social condition If he deserves it, give to him out of your industrial clinic the same service you give in the general public clinic In order to make this propaganda go with the profession we must steer clear of robbing the physician of his just part of medical and surgical service

Dr Sidney M McCurdy, Youngstown, Ohio It seems to me that a section on preventive medicine has a duty to perform in supporting the physical examination of employees The only active opponents that I can discover are the labor unions and they seem to be undergoing a change of sentiment We should help educate them to the fact that the examination is for honest purposes, and that no one will in the end profit more than the workingman

The question of psychology and its relation to a working force, I am much pleased to have brought out by Dr Rucker Our accident department finds that it can only prevent 35 to 40 per cent of accidents by mechanical devices, the rest probably belonging to the individual and to his psychologic attitude I have spent much thought and time in the endeavor to discover an accurate and rapid test for recording the mental condition of applicants for employment. Thus far I have not felt satisfied that any practical tests have been evolved

Lastly, I wish to thank Dr Warren for his most able paper on insurance I do not think that there will be any opposition from the employee when state insurance becomes necessary We have a relief association, not compulsory, to which 5,600 of our 8,000 men belong This would seem to indicate that the men appreciate the need of insurance and there is a real desire and necessity for a cheap form of protection I am a firm believer that while the medical fraternity may suffer a diminution in the size of its fees, for the ultimate good of society, state and national insurance for sickness and old age is the only logical solution of this problem

Dr. W F Snow, New York The purpose of offering my paper was to bring out, if possible, that there are moral and social hazards in industry as well as health hazards, and that the complicated interlocking of such hazards with those that we technically know as health hazards, makes it possible to attack some diseases in the reduction of their prevalence rather by an attack on these moral and social hazards than directly on the health hazards Venereal diseases are in this way sufficiently closely related to industry to demand close observation on the part of those working with health hazards in occupations

Dr John W Kerr, Washington, D C Much more might be said on this subject Its importance to the medical profession has been brought out this morning I would just like to emphasize its importance in relation to the public health movement, but I feel that health departments should be in closer touch, and that in future plans the work should be placed so far as possible in the hands of health departments [In order to give practical effect to the resolution already adopted Dr Kerr moved that a committee be appointed for the further consideration of this subject, to report at the next annual meeting This motion carried]

THE ROENTGENOGRAPHIC APPEARANCES IN RICKETS

WITH A COMMENT ON DIFFERENTIAL DIAGNOSIS *

ROBERT W LOVETT, M D

BOSTON

During the past winter between 6,000 and 7,000 roentgenograms from the records of the Children's Hospital were examined for the purpose of selecting from among them the plates of rickets, of which there were found between 500 and 600 These were set apart for a study which forms the basis of this paper This ratio of 10 per cent of rickets in the cases requiring roentgenographic study in the varied clinics of a children's hospital is of interest The plates of the general group covered cases of all types of trauma, congenital bone malformations, tuberculosis, scoliosis, osteomyelitis, empyema, scorbutus, osteomalacia, chondrodystrophia and syphilis

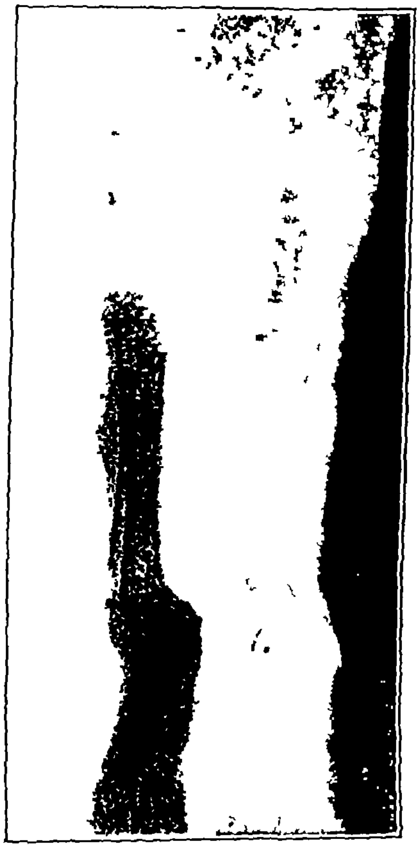

Fig 1 —Acute rickets First stage indistinct epiphyses, periosteal thickening, fractures

The plates of rickets were then carefully gone over several times from two points of view, (1) to establish and classify the Roentgen appearances of the acute, subacute and convalescent phases of the affection, and to define the finer bone changes associated with the disease, and (2) to determine definitely those points in differential diagnosis by which rickets might be distinguished from such diseases as osteomalacia, scurvy, congenital syphilis and similar affections

The research was originally undertaken to see if it was possible to determine from roentgenograms when the rachitic process had subsided sufficiently to make operative interference advisable in cases of knock knee and bow leg Experience had shown that such a determination by age limit was unsatisfactory, because even when children are 4 and 5 years old, one sometimes encounters soft bone offering little resistance to the osteotome, and in these cases profuse bleeding often results, suggesting that the rachitic process is still active

The study of the plates, however, proved so interesting with regard to the broader aspects of the disease that the inquiry enlarged itself into a comprehensive investigation of the Roentgen-ray phenomena of the disease in general A review of the literature proved that apparently such a survey was covering practically new territory

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* From the Orthopedic Clinic of the Children's Hospital.

* Read before the Section on Orthopedic Surgery at the Sixty Sixth Annual Session of the American Medical Association San Francisco, June, 1915

Fraenkel and Lorey have contributed interesting material from which a Roentgen diagnosis of typical deformities can be made, but the finer aspects as to differential diagnosis are not given, nor is there any attempt to trace the stages of the disease through a definite Roentgen sequence

Von Recklinghausen's[2] study of pathology adds certain substantiating data to the roentgenologic evidences of the disease Koch's[3] work from the experimental biologic aspect of etiology is familiar in the recent current literature on the subject

There have been numerous French articles[4] dealing with the relation of rickets and syphilis, but as the literature in general does not bear directly on the aspect of the question under consideration, this paper will consist almost wholly of my own observations and conclusions

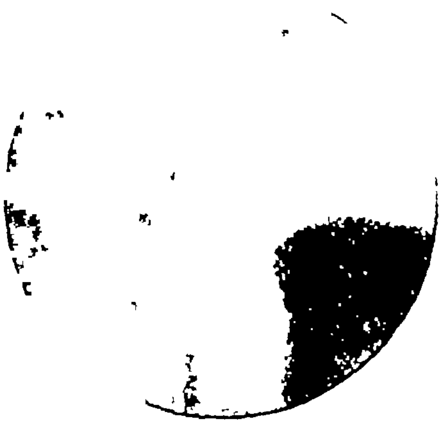

Fig 2 —Knee in acute rickets showing indistinct epiphyses and ragged diaphyseal ends with blocking off of lower end of shaft

On a comparative study of the plates, the disease divided itself naturally into three stages, stages in which the separation must of course be to some extent arbitrary, but which, on the whole, are distinct These apparently correspond to three stages based on anatomic pathologic data advocated by Guerin and Monti[5] as the stages of swelling and rarefaction, deformity and organization, healing and reparative eburnation

For this investigation, the knee was chosen as the most favorable joint for study The manifestations, however, are similar in other joints

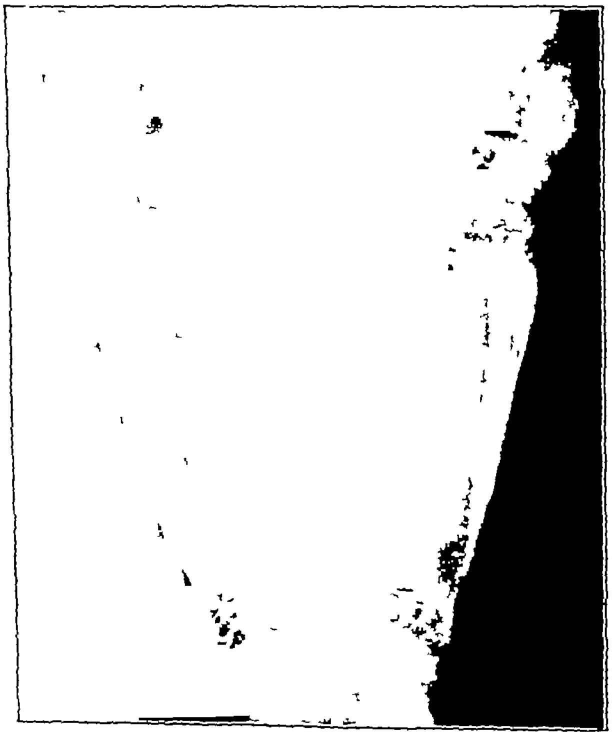

Fig 3 —Second stage epiphyses more ossified ends of bones broadening more marked on the side on which the strain is greater

FIRST STAGE

In the first stage there are two types, which differ in severity This stage is the early period of the disease, the period of onset and acute metabolic disturbance In the *milder* type, the ends of the diaphysis become frayed out instead of clear cut, and the epiphysis casts little or no shadow, while the center of ossification is small or absent, and at times appears multiple The whole joint is surrounded by a hazy cloud, and the diaphysis on the whole contains less lime than normal This is very marked in the juxta-epiphyseal region Up to this point deformities have not begun

In the *severer* type of the first stage, the epiphyseal appearances are similar, but more marked In the diaphysis, severe general bone atrophy exists, and there is pronounced periosteal thickening, associated as a rule with fracture of the bones, most often in the arms These cases of multiple fracture are very common, and are frequently classed as osteogenesis imperfecta, an affection wholly different in character Fraenkel and Lorey use the terms "florida" and "gravissima" in connection with these severer manifestations

SECOND STAGE

In the second stage, the shadow of the epiphysis becomes more marked The area is ragged and irregular about the margin, and calcification is more marked at some points than others, which results in a characteristic mottled appearance The ends of the diaphysis begin to broaden, especially on the side on which the strain is greatest, which produces a ledge or lip next to the epiphyseal line In bow legs this is found on the inner side of both the tibia and femur, and in knock knee on the outer side of the same bones This is the beginning of compensatory changes in the bone structure, which from all appearances are related to weight bearing

The diaphysis in the second stage begins to give a more definite shadow The region next to the epiphysis is streaked longitudinally, and is the area of maximum disturbance At the epiphyseal end of the shaft there is generally a transverse area of increased density reaching about a quarter or a half an inch from the epiphyseal line, bounded at the end furthest from the joint by a fairly sharp line This continues into the third stage, in which it may become more defined, and resembles in many respects similar changes observed in syphilitic bones in infants, described as osteochondritis, a point discussed under differential diagnosis

At the end of the diaphysis next to the epiphyseal line there often appears in the late second or early third stage a clear transverse white line, showing an increased deposit of lime in the lower end of the shaft This is apparently not to be distinguished from the "white line" which is described as a charac-

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[1] Frankel Eugen, and Lorey Alexander Die Rachitis im Roentgenbild 1910

[2] Von Recklinghausen Rachitis and Osteomalacia 1910

[3] Koch J Ueber Experimentelle Rachitis, Berl klin Wchnschr 1914

[4] Dufour, H and Huber J Syphilis et rachitism, Ann de med. et chir inf xii 702 Kassowitz, M Ueber Rachitis, II Osteochondritis rachitica. Jahrb. f Kinderh. 1912, lxxv, 194 334, 489 581

[5] Monti Rachitis Kinderheilkunde in Einzeldarstellungen 1900 ii.

teristic of scurvy, but which is equally characteristic of rickets[6]

Along the shaft of the long bones a longitudinal change occurs, which is compensatory in nature This consists in a cortical thickening on the concave side of the bones, chiefly noticeable in bones which have curved This change is of endosteal origin, and persists into the cured stage of the affection It is constant in curved bones, and is one of the most important characteristics in differential diagnosis

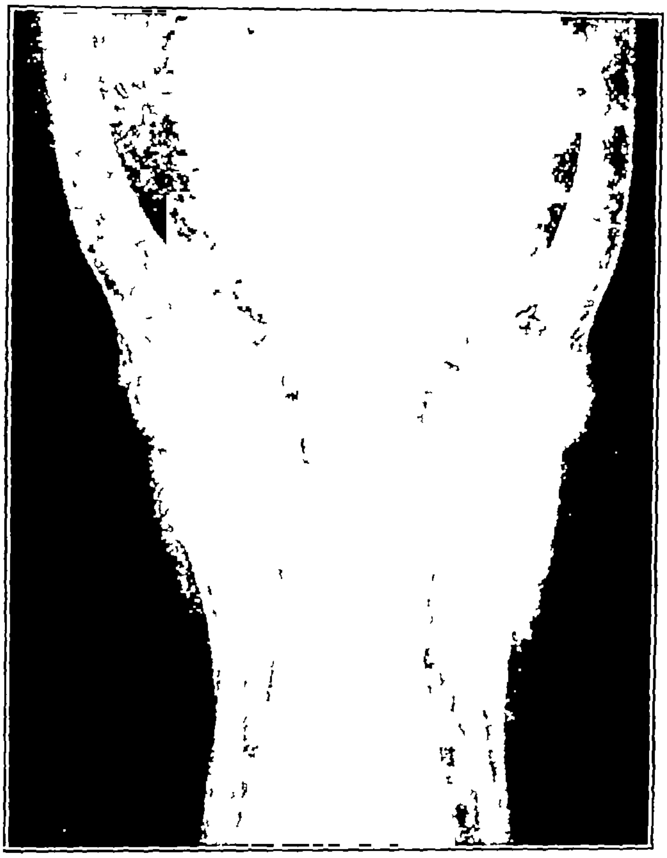

Fig 4—Second stage of rickets, showing returning ossification Note "white line" at ends of diaphyses described as characteristic of scurvy, chambering of lower part of femur

Further changes in the second stage consist in chambering of the interior of the bone, where light areas in the shaft indicate the absence of marked bone deposit, and heavier lines of ossification show the irregular development of trabeculae The smooth homogeneous shadow of normal bone is replaced by an irregularly streaked shadow structure

The second stage in general is a period of systemic reaction to the disease, in which signs of returning ossification occur and when deformity begins

THIRD STAGE

In the third stage, the epiphysis begins to resume its normal contour and homogeneous shadow density Irregularities persist in the marginal outline, and there is still a little mottling in the ossification The lipping of the diaphysis has enlarged the bone ends, and there is in consequence a discrepancy in breadth between the diameters of the diaphysis near the epiphyseal line and the epiphysis This relative difference in size is characteristic of this disease The clouded condition surrounding the joint in the earlier stages has gradually cleared away, and the bone shadows are more definite in consequence The white line mentioned in the second stage becomes more pronounced in the third

The other general changes are greater definiteness in the bone shadow throughout the shaft as well as in the joint, and the accentuation of the compensatory thickening of the shaft on the concave side of the curvature Though irregularities in the bone shadow continue, they are much less marked than in previous stages In the plates so far observed, the lower epiphysis of the femur seems to be the last to recover its normal outline, but a more extended general study would be required to establish this

The third stage is what may be termed the period of convalescence From this point on, the deposit of bone continues, the outline of the epiphysis becomes clean cut, and the epiphyseal shadows homogeneous and rather more than normally dense, and irregularities in deposition in the interior of the shaft become less marked

The characteristics of recently cured rickets are the enlargement of the diaphyseal end, which is not gradual but is a sudden lipping or ledging next to the epiphysis, the relative disproportion between the diaphyseal end and the epiphysis, and the cortical thickening on the concave side of the bone

For diagnostic purposes, therefore, the changes may be summarized as follows The epiphyses show scanty and irregular osseous deposit, and never have a clear normal outline during the acute process The end of the shaft is streaked, and presents an irregular line at the joint end and above it a curious transverse zone of different structure from the rest of the bone The interior of the shaft becomes chambered and irregular, and the whole shaft casts less shadow than normal The ends of the shaft broaden at the junction with

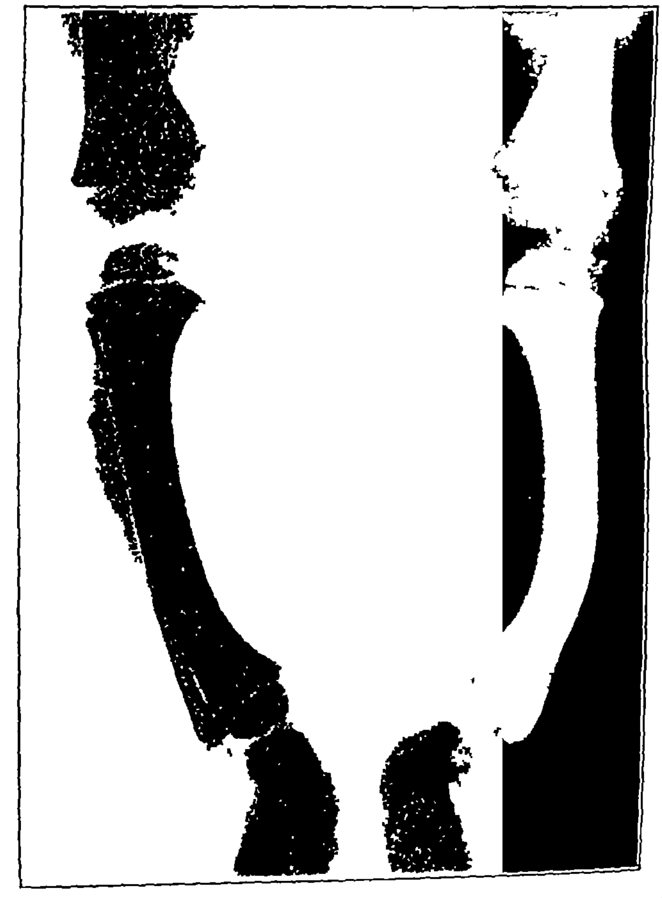

Fig 5—Third stage of rickets clear and ossified epiphyses, curved bones with compensatory thickening on concave side of curve, broadened ends of shaft at epiphyseal line, increased density of bone

the epiphysis, and throw out ledges on the side when strain is to be met A compensatory cortical thickening occurs on the concave side of curved long bones

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[6] Talbot, Dodd and Peterson Experimental Scorbutus and the Roentgen Ray Diagnosis of Scorbutus, Boston Med and Surg Jour, Aug 14, 1913

DIFFERENTIAL DIAGNOSIS

In cases of scurvy, the roentgenograms show the clear outline of the epiphysis Even in cases in which extensive subperiosteal hemorrhage exists, with the attendant bone atrophy of the shaft and occasional dislocation of the epiphysis, the outline of the latter is quite distinct Atrophy in scorbutic cases, though at times extreme, is uniform The one point which is common to the two diseases in some cases is the white line occurring at the ends of the diaphyses On the condition of the epiphysis alone, however, it appears possible to differentiate the two diseases

In chondrodystrophia foetalis, the epiphysis is perfectly constant in maintaining its clearness and regularity of outline throughout the affection, and though the ends of the diaphyses are broadened, the changes occurring in this region in rickets, which have already been outlined, distinguish this part of the skeleton from chondrodystrophic deformities, which present comparatively uniform shadow densities

In hereditary osteogenesis imperfecta, one typical hereditary case has been studied very carefully through a period of eight years During that time there has never been any epiphyseal abnormality or disturbance in ossification at the ends of the diaphysis or elsewhere in the bones, although the Roentgen shadow of the bones is less dense than normal

The differential diagnosis between congenital syphilis and rickets from Roentgen-ray appearances is at once the most uncertain and interesting part of this comparative Roentgen study In this connection an extended study of plates of congenital syphilis was made, a study in which I had the invaluable help of my colleague, Prof Abner Post

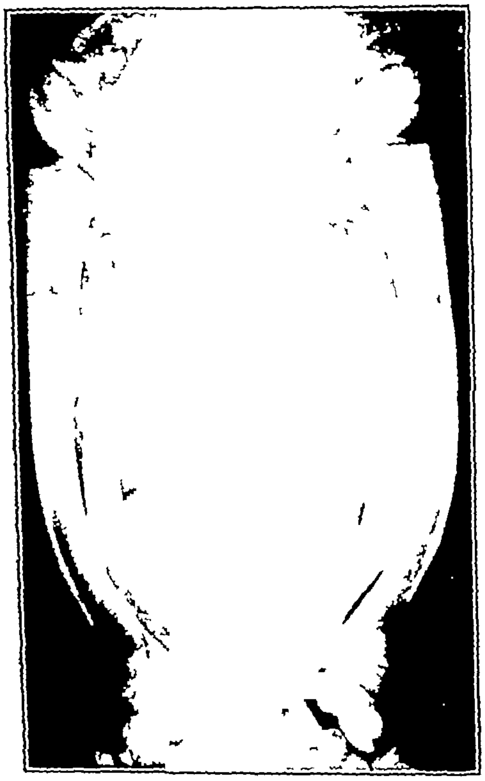

Fig 6—Side view of anterior tibial curve due to *rickets thickening is on concave side of curve*

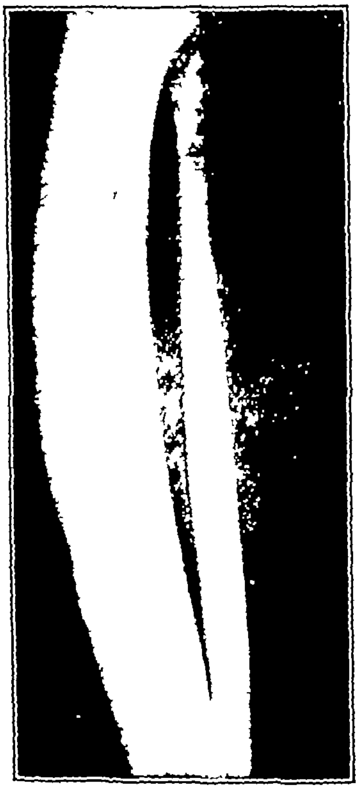

Fig 7—Side view of anterior tibial curve due to syphilis, thickening is on convex side of curve

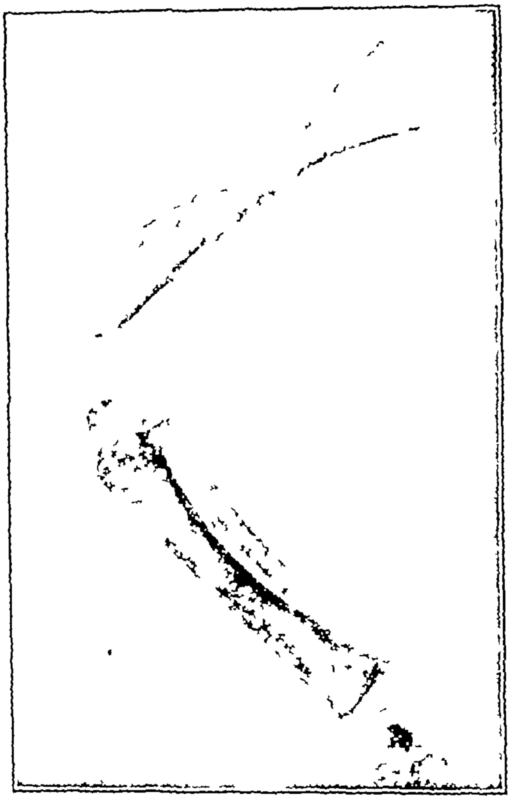

Fig 8—Side view of leg bones in congenital syphilis, showing periosteal thickening but distinct epiphyses. (After Fraenkel)

In children old enough to have acquired rickets, that is, in cases in which the question of differential diagnosis between these two conditions might arise, the epiphyses are far enough advanced in their development to be the focal point in the diagnosis The outline *of the epiphysis in* syphilitic cases is clear and not seriously disturbed as in rickets The appearance at the epiphyseal ends of the diaphysis of the zone of bone modification known as *osteochondritis in syphilis*, as has been said, is similar in appearance to the characteristic diaphyseal change in rickets In the latter, however, there is in addition to the absence or cloudiness of the epiphysis a marked enveloping cloudiness of the joint The time of the occurrence of this modification of the end of the shaft is also widely different In syphilis it is recorded chiefly in the fetus and the new-born, and of its later history we know practically nothing In rickets it occurs in the first dentition Extensive periosteal disturbance is common to the two diseases In the severe type of acute rickets in children with no syphilitic history or signs of syphilis, with a negative Wassermann reaction, severe periosteal thickening, very frequently associated with fracture, is found Such periosteal disturbance diminishes with the progress of the disease, and shows no tendency to bone formation such as is the case in the periostitis ossificans of syphilis Moreover, fractures are rare in syphilitic infants In the metacarpal bones this periosteal thickening is sometimes present in rickets presenting Roentgen-ray appearances of dactylitis, a subject now under investigation for future report.

The irregularities in the medullary shadow of the shaft in syphilis are due to irregular increases in density. The irregularities in rickets are related primarily to diminished density. In the later stages of both diseases the occurrence of cortical thickening is highly differential. In rickets the thickening is endosteal in origin, and is always on the concave side of the curve, while in syphilis the thickening is periosteal or osteoperiosteal, and is very uniformly on the convex side of the curve, resulting in the lower leg in the characteristic "saber tibia." This thickening in syphilis may occur on both sides, however. Further differential study of the two diseases is demanded, because they not infrequently exist in the same patient.

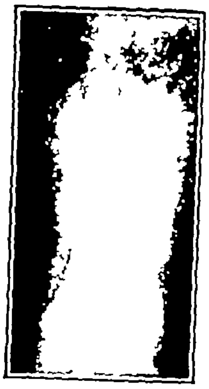
Fig. 9.—Osteogenesis imperfecta. Hereditary case under observation nine years.

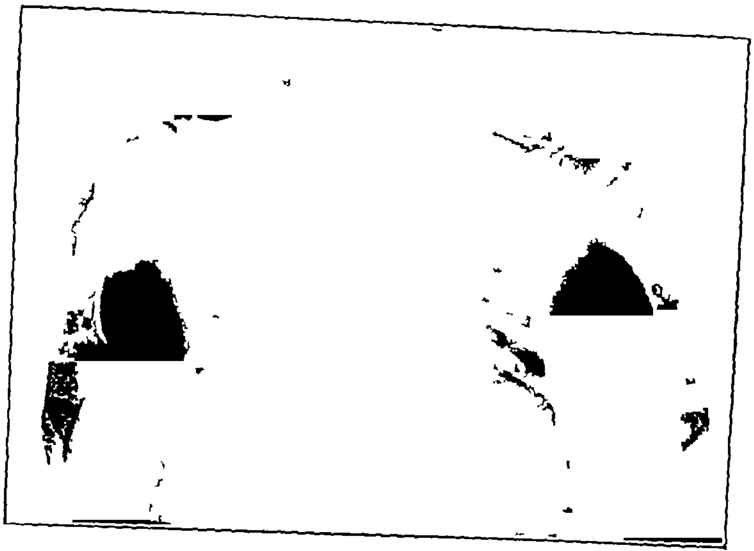
Fig. 10.—Chondrodystrophia foetalis. Broadening of ends of shaft, but distinct epiphyses.

SUMMARY

In rickets, constant changes are to be found while the disease is active, and are located most markedly in the epiphysis and the epiphyseal end of the shaft, but they also involve the shaft. The most important of these changes are (1) delayed ossification and indistinctness of the epiphysis, (2) fraying out of the end of the shaft next to the epiphyseal line, (3) broadening of the end of the shaft next to the epiphyses, (4) cortical thickening on the concave side of curved bones, and (5) areas of diminished density in the bone shadow of the shaft.

Periosteal thickening and multiple fractures often occur in the acute stage of the disease.

234 Marlborough Street.

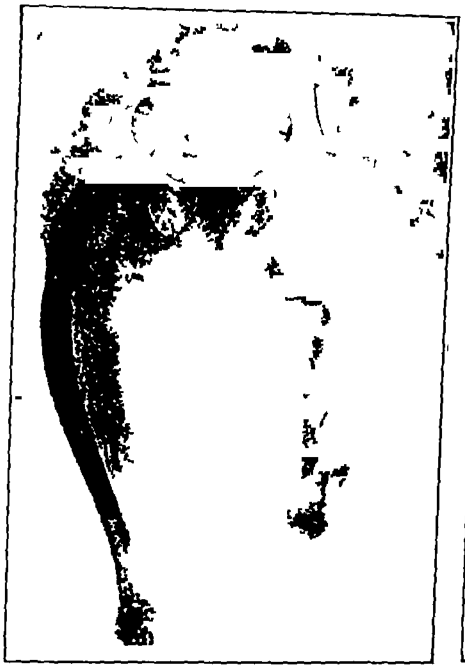
Fig. 11.—Osteomalacia, showing absence of disturbance in epiphyses or epiphyseal region.

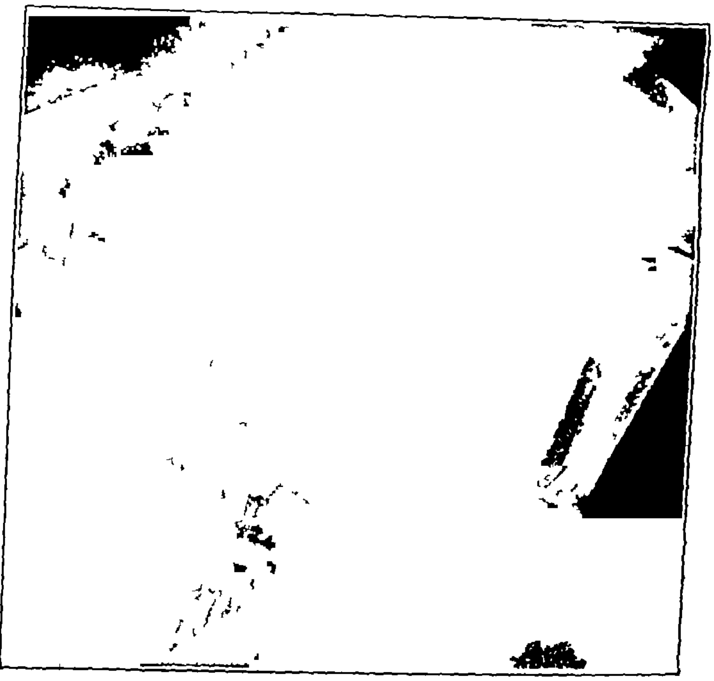
Fig. 12.—Scurvy, showing bone atrophy, "white line" and periosteal disturbances in shaft, but no trouble in epiphyseal regions.

ABSTRACT OF DISCUSSION

Dr. Henry W. Frauenthal, New York: I know I am expressing the opinion of the gentlemen present that Dr. Lovett has given us a most scientific differential diagnosis of the various stages of rickets. But it is most difficult to differentiate between the late rickets and syphilis in our roentgenograms. I expect on my return home to review the plates taken at the Hospital for Deformities and Joint Diseases with added light from this valuable demonstration.

Dr. Roland Meisenbach, Buffalo: I should like to ask Dr. Lovett whether he has laid emphasis on the relation between the width of the epiphyseal line and the hardness or softness of the bone. For instance, in using the osteotome in bow legs or knock knees, we frequently find that in the wide and jagged epiphyseal line the deformity usually occurs near the epiphysis and the bone is spongy, whereas, in the deformities which occur farther away from the epiphyseal line the bone is relatively harder. The decision on a point of osteotomy often depends on the roentgenogram, as does also the feeding of the patient. It is interesting to see the changes in the rachitic bones, the effect of feeding, by means of the roentgenogram.

Dr. J. T. Rugh, Philadelphia: One thing which Dr. Lovett brought out is highly instructive to me. I do not know whether others have had the same understanding in regard to the deposits of bone in these rachitic cases that Dr. Lovett mentioned. I have always understood and taught that bone was deposited where strain took place just as Dr. Lovett said, and my understanding of the mechanics of these curved bones was that in a bone of this kind—a weight bearing one—the strain did not come on the concave but on the convex side. It is found that in practically all Nature, where there is weight bearing, the strain is on the convexity of the part. This is the part that is stretched. My understanding was that in these bones this was the part which was thickened, and in osteotomy or osteoclasis of these bones, this has been the part that always gave me the greatest amount of resistance with the osteotome. I must say this is a total reversal of my idea, and the Roentgen-ray plates which Dr. Lovett has shown bear out unquestionably his idea. I have seen specimens of bones, however, which have been classed as rachitic, in which a section showed the thickening to be on the convexity of the curve Possibly, as Dr Lovett has mentioned here, they may have been syphilitic bones instead of rachitic.

Dr. Robert W Lovett, Boston I do not agree with Dr Rugh's mechanics in this matter We are considering the question of weight bearing strains and I should suppose that the line of weight would be on the concave side and not on the convex side of the curved tibia

Dr. H R Allen, Indianapolis You refer to an operation, in which you have the strap arrangement on the outside

Dr. Lovett In regard to Dr Meisenbach's question, I believe we are operating too early in a good many cases of rickets I personally do not think any patient should be operated on until the lower epiphysis of the tibia, taking that as a standard, has become rounded with a clear outline. As long as it looks indistinct I think it ought to be left alone. At least, that is my experience When we do operate too early the bone is likely to bleed profusely and cuts like cheese. As a by-product of this investigation I have come definitely to the conclusion that those cases which Dr Meisenbach mentions are the ones that make the trouble, and that we ought to study our cases with the Roentgen ray and not operate until the subacute stage of rickets is over and the deposit of bone has begun again, because when they are in the subacute stage bones are very poorly provided with lime and are very soft. I thought that we should have a perfectly clear epiphysis before doing an osteotomy or osteoclasis The difficult point in the whole investigation is in the confusion with syphilis, and it is going to take hard work and exhaustive study to clear that up I believe the changes of rickets are definite in character and can be diagnosticated in the presence of syphilis, but even the best syphilographers do not know what becomes of the so-called osteochondritis seen in early life

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PROLONGED AND ACCURATELY TIMED INTRAVENOUS INJECTIONS OF SUGAR

A PRELIMINARY REPORT *

R T WOODYATT, MD
W D SANSUM
AND
RUSSEL M WILDER
CHICAGO

The study of sugar tolerance and the effects of prolonged uniform injections of glucose by vein, of which this is an abbreviated report, was undertaken primarily for the purpose of perfecting an accurate clinical method for estimating the sugar-using powers of different individuals It was also anticipated that the data which would be obtained could not fail to have other applications, and that the method employed might be in itself of general interest as a means of studying problems of absorption, metabolism and elimination, and have therapeutic application Expectations concerning all of these things have been fulfilled

The study was based on certain prior ideas which were in part original and in part conceptions which had been expressed before by Doyon and DuFort in 1901, and by Blumenthal in 1906 These may be stated briefly

1 It is at present a common clinical practice to estimate sugar tolerance as the number of grams of glucose which can be given by mouth all at once and just fail to cause glucosuria, and having done so to draw inferences as to the power of the individual to *utilize* glucose But reflection will show that "tolerance" properly conceived as a measure of the power of the body to utilize glucose must depend on the rate at which the tissues are able to abstract glucose from the blood by their combined powers to burn it, to reduce it into fat or to polymerize it into glycogen It must be clear that this sum of three chemical velocities cannot be expressed in grams, nor yet in grams of glucose per kilogram of body weight, but that the element of time must be taken into account *Tolerance must be regarded as a velocity, not as a weight It must be measured and expressed in grams of glucose per kilogram of body weight per hour of time* or in other convenient units of weight and time

2 When sugars are administered by the stomach, the length of time during which they are actually brought to the cells must depend on the motor power of the stomach and of the bowel and on the rates at which the sugars can be absorbed, and even when they are given subcutaneously or by any other route which involves absorption as a prelude to their entering the blood, the rates at which they enter the blood will depend on the rates at which they are absorbed By any of these, but especially by the oral method, the actual rate of entry of sugar into the blood and tissues at large must vary with a wide range of physical, physiologic and pathologic conditions over which we have no control, nor will it ever be possible by such methods to force sugar to enter the blood any faster than it can be absorbed The rate of sugar absorption is a self-limited thing, for when a certain concentration of sugar is once present in the blood, no quantity given by mouth or subcutaneously or intraperitoneally can raise it higher In fact, if the concentration of blood sugar is raised above a certain point by intravenous injections, sugar passes out into spaces from which it would ordinarily be picked up, the absorption rate from these spaces then being expressible only as a minus value

3 *The nearest possible approach to a scientifically accurate method of sugar tolerance measurement must consist in direct intravascular administrations,* since only by this method is the variable factor of absorption rates reduced to a minimum When sugar is introduced directly into the circulating blood, each tissue receives its share in proportion to its vascularity, and absorption plays no part except as it may be concerned in the transfer of sugar from the local capillary to the perivascular lymph, and the taking up by each individual cell of the sugar with which it is bathed

4 When glucose is introduced directly into a vein, we should expect different results with different rates of administration These different effects might be visualized by conceiving the body as made up of clear transparent tissues with blood like water, while the sugar injection is conceived as an injection of some red dye If the injection is uniform, continuous and not too rapid, we should first see the dye diffuse through the circulating blood, making the veins and arteries stand out in a deeply colored tracery in the otherwise transparent body Then the color would begin to "run" from the neighborhood of the capillaries, and, diffusing into the cells, would tint them —at first delicately and in some parts more than others as a histologic section absorbs the stain, then deeper and deeper until the whole mass of tissues were

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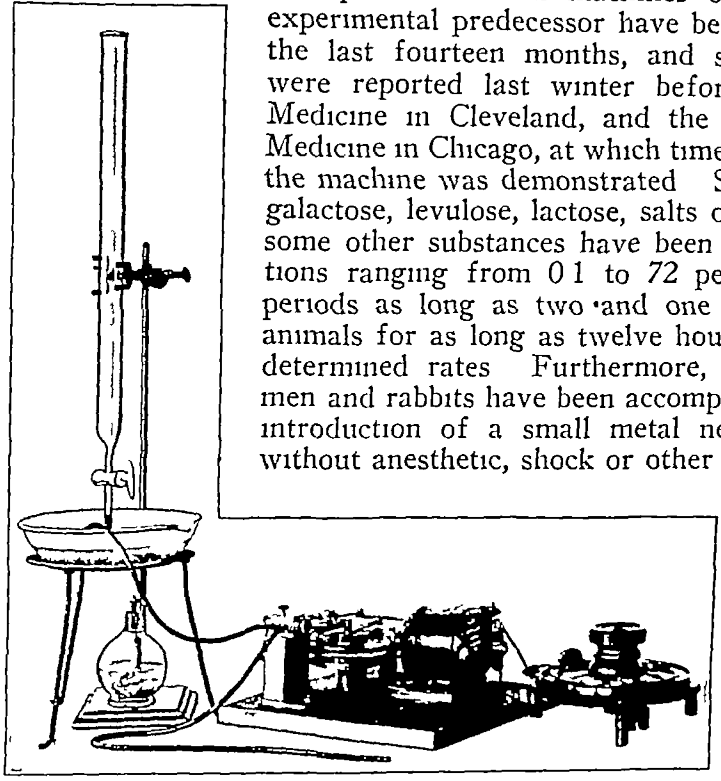
* From the Otho S A Sprague Memorial Institute Laboratory for Clinical Research, Rush Medical College.

diffusely colored *This would take an appreciable time* Now if the injection is stopped, the color will gradually fade away as the sugar or dye is used up in the cells If the injection is begun again, the staining process will be repeated, and so on, the tissues alternately flushing and paling But if the injection rate is just equal to the rate of utilization, a uniform tint will be maintained indefinitely If the injection rate is faster than the rate of utilization, the color of the tissues will continue to deepen until they can stain no more, and finally the kidney, sharing in the general picture, drips the excessive stain, and, continuing to do so, the combined rates of excretion and utilization again just equal the rate of injection and the body again maintains steadily a certain depth of color, now of course deeper than before

It becomes apparent that to determine the utilization rate of glucose in the body, the problem is to find the greatest rate at which glucose can be injected into a vein steadily without causing any glucosuria, and following the foregoing analogy it is clear that the injection must be continued long enough to permit the sugar to diffuse uniformly into the tissues and bring each to its corresponding state of saturation before any conclusion is drawn as to what the final and permanent effects of a certain rate of injection really are It must also be apparent that a single syringeful of sugar solution injected all at once into a vein represents simply a very high rate of injection for a very brief period of time, and that such a method is the least capable of giving accurate information concerning utilization rates and the general behavior of intravenously administered sugar of any which could be devised Yet the literature is confused by many fallacious ideas which have been developed out of such methods



Apparatus for intravascular administrations On the right is the quantitative intravenous pump with rheostat for motor speed control the solution is drawn from a buret which may be more slender than that shown, and fitted with a side neck leading to a second buret of large capacity to facilitate refilling The rate of injection is checked at intervals by readings on the buret, and corrected if necessary by touching the rheostat The flame and bath on the left warm the solution The delivery tube lies in front

With these principles in mind, we have devised machines for the purpose of giving uniform intravascular administrations at precisely controlled and predetermined rates and for long periods of time

DESCRIPTION OF APPARATUS

The machine consists of a glass syringe barrel with a metal piston provided with a piston ring (record syringe), the barrel being fixed while the piston is actuated by a piston rod from an eccentric on a power shaft The latter is driven by an electric motor through a worm and gear which reduces the speed of the motor and increases the power correspondingly On the nozzle of the syringe there is a two way all metal valve of special design which is turned automatically by a cam shaft and alternately permits an influx and outflow of fluid to or from the pump barrel The rate at which the machine delivers fluid is controlled in three ways first by the size of the barrel, which is interchangeable so that any capacity can be used from 0 5 to 10 c c , second, by a device which regulates the stroke of the piston to any desired length from a millimeter up, and, third, by a rheostat with which the motor speed can be controlled delicately while running so that the pump makes any desired number of strokes per minute between 15 and 60

The machine is intentionally provided with a surplus of power It is heavily built and of a high grade of workmanship It pumps precisely and relentlessly anything from water to an 80 per cent glucose syrup, at any rate from 10 c c to 5 liters hourly, overcoming with negligible variations in speed any minor obstructions which may occur in the tubing or the intravenous cannula or needle All parts which come in contact with the fluid to be injected are detachable and sterilizable A photograph of the machine is here reproduced

Experiments with machines of this type and an experimental predecessor have been conducted during the last fourteen months, and some of the results were reported last winter before the Academy of Medicine in Cleveland, and the Society of Internal Medicine in Chicago, at which times an earlier model of the machine was demonstrated Solutions of glucose, galactose, levulose, lactose, salts of various kinds and some other substances have been given in concentrations ranging from 0 1 to 72 per cent to men for periods as long as two and one half hours, and to animals for as long as twelve hours, at precisely predetermined rates Furthermore, the experiments in men and rabbits have been accomplished by the simple introduction of a small metal needle into the vein without anesthetic, shock or other nonphysiologic factor For dogs we have employed a small blunt needle provided with a flange, or a very small cannula which was introduced into the saphenous vein under novocain

The results so far obtained have led us to believe that timed intravenous injections of solutions of known concentration over long periods of time offer a most valuable method of studying a wide range of problems of absorption, kidney function and intermediate metabolism They also promise to extend the possibilities of intravenous injections for diagnostic and therapeutic purposes beyond anything which has been accomplished heretofore Some of the principal results may be mentioned briefly in this place

EXPERIMENTAL RESULTS

1 A normal rabbit, dog or man can utilize between 0 8 and 0 9 gram of d-glucose per kilogram of body weight and hour of time without glucosuria for an indefinite time, that is, d-glucose in 10 to 50 per cent solution can be introduced directly into the veins at rates corresponding closely to 0 85 gram of glucose per kilogram of body weight and hour of time for from six to twelve hours and not produce any glucosuria Such rates of glucose administration do not cause any effect which can be interpreted as diuresis

These facts force certain conclusions, some of which may be mentioned

(*a*) A man weighing 70 kg, when resting quietly in bed, may receive and utilize 63 gm of glucose by vein per hour without glucosuria (This is an accomplished fact) He then receives 4 times 63, or 252 calories per hour, a rate corresponding to 6,048 calories per day If his resting requirement were 3,000 calories per day, he could thus receive double what he needed, or enough to cover the caloric expenditure of the same man during heavy physical exertion *Intravenous nutrition with glucose is thus proved to be a feasible clinical proposition*, and the way is opened for experiments with amino-acids, polypeptids, etc

(*b*) The normal tolerance limit for glucose, expressed as a velocity, is established at close to 0 85 gm glucose per kilogram of body weight hourly, which agrees approximately with what Blumenthal has established by repeated small intravenous injections in animals

(*c*) The idea, already in part discredited by the work of Pavey and Godden and others, that the "glycogenic function of the liver" is indispensable for the utilization of glucose, or that it is in any sense necessary as a *barrier* to prevent sugar absorbed from the bowel from being lost in the urine, is definitely laid at rest

(*d*) The idea that any large quantity of glucose given by vein always causes glucosuria and diuresis is an error based on clumsy methods of study

2 The intravenous tolerance limit in cases of exophthalmic goiter has been found as low as 0 65 gm per kilogram and hour, but two cases of acromegaly had a tolerance of 0 85 gm per kilogram and hour, which is not above the normal, although by the oral method it had not been possible to cause glucosuria with glucose

3 The tolerance limit for levulose when given by peripheral vein has been found close to 0 15 gm per kilogram and hour, or only one-sixth that of glucose For galactose it is even less or about 0 1 gm per kilogram and hour For lactose it approaches 0, as known before

4 When glucose is given by vein faster than at the rate of 0 9 gm per kilogram and hour, glucosuria appears, then usually a little later, diuresis When the rate of injection exceeds the normal utilization rate, the time which elapses before glucosuria appears varies If the injection rate is much too fast, the elapsed time is correspondingly short, or if the tissues have previously been partly saturated with sugar, the same applies If the injection rate exceeds the utilization rate by about 0 1 gm per kilogram and hour and the tissues happen to have been low in sugar, it may require several minutes of injection before glucosuria begins But if a given rate of glucose injection causes glucosuria at all, it always begins to do so within the first half hour The same general principles apply to other sugars with lower rates of injection

5 As the rates of glucose injection are increased above 0 85 gm per kilogram and hour, the rates of overflow in the urine increase also according to definite mathematical laws At any given rate, say for example 1 8 gm per kilogram and hour, the glucosuria begins slowly, increases in a steep curve, and finally becomes constant at some level characteristic for this rate of injection The height of this level, of course, is higher in the case of the more rapid injections and lower for the slower ones Also the time which elapses before the level is established is the greater the higher the level to be attained It frequently takes from three to four hours for a glucosuria due to a uniform glucose injection by vein to reach its constant level

As already stated, about 0 85 gm glucose per kilogram and hour may be given indefinitely without glucosuria If we give twice this quantity in the same time, that is, 1 7 gm glucose per kilogram and hour, there is glucosuria which, when constancy is attained, averages about 0 17 gm per kilogram and hour This confirms the older view of Carl von Voit, proved to hold for sugar by Lusk, and Fisher and Wishart, that *increasing the concentration of the food in the tissues* increases the rate of utilization But if glucose is given at a rate faster than 2 gm per kilogram and hour, a large percentage of all glucose in excess of the 2 gm per kilogram and hour appears in the urine, once constant conditions have been secured

In a normal individual, the greatest rate of glucosuria which can be produced by feeding any quantity of glucose by mouth is limited, and at most approximates that which is produced by an intravenous injection at the rate of 1 8 gm per kilogram per hour Hence it would be reasonable to believe that when sugar is given by mouth in health, it is never absorbed faster than at this rate This method of estimating an absorption rate by finding a rate of direct intravenous injection which just produces the same effect is, so far as we know, new, and it should be applicable to other problems

6 As glucose is given at rates exceeding 0 85 gm per kilogram and hour, and unburned glucose begins to accumulate in the tissues and pass out chiefly in the urine, it carries with it water With rates of injection only slightly exceeding 0 9 gm per kilogram and hour, the amount of sugar which escapes burning is moderate, and so the rate of glucosuria and the rate of diuresis are correspondingly moderate But when sugar is given at the rate of 5 4 gm per kilogram and hour (that is, 54 gm hourly for a 10-kg dog), this is equivalent to giving about 3 6 gm per kilogram and hour over and above what can be burned It is like giving 3 6 gm per kilogram and hour to a total diabetic

The effect is an incredibly great diuresis When glucose is given at this rate to a 10-kg dog, the urinary output rises rapidly to the vicinity of 350 c c per hour If each hour the dog receives enough water to make good the losses, the rate of diuresis or a higher one can be maintained for long periods of time A 10-kg dog actually passed in eight hours 2,800 c c of urine This would correspond to 19,600 c c for a man weighing 70 kg in the same time, or an hourly rate of 2,450 c c If enough water is not given to counterbalance the urinary water losses, the volume of urine falls and the dog suffers from thirst Death may be caused in this way Unless plenty of water is given, not all of the unused sugar can leave the body, since it appears that the concentration of glucose in the urine will not rise above 12 5 per cent To make 12 5 gm of glucose pass out of the body through the kidneys, at least 100 c c of water are necessary On the other hand, if one gives too much water with the hourly glucose injection rate of 5 4 gm per kilogram and hour, there is danger of stopping the heart mechanically We have produced a diuresis as high as 600 c c per 10 kg of body weight for one hour, and still greater rates are possible, but attempts to continue such enormous water traffics lead to heart failure This rate would correspond to an output of 4,200 c c of urine hourly from a man weighing 70 kg, or 100 liters in twenty-four hours *In giving intravenous injections of glucose there are then two things to avoid too great dehydration on the one hand, and heart failure from imposing too much mechanical work on the other These can both be avoided by knowing the number of grams of glucose which enter the body hourly, and what volume of water is moved by such a rate of sugar injection*

CLINICAL APPLICATION

It is hardly necessary to emphasize the therapeutic possibilities which these experiments suggest With a knowledge of the proper concentration of the solution to be used, and the rate appropriate for this particular solution, we may (1) abstract any quantity of water from the body which we deem safe or desirable, or we may (2) pass through the body a great flushing stream to wash out poisons How far the principles worked out for normal individuals will apply in disease we have only begun to learn In this connection it may be well to recall that the literature already contains observations on the use of sugars in therapeutics

Sugars have been given by mouth or bowel for purposes of nutrition or to obtain other desired metabolic or chemical effects in a wide range of clinical conditions But as pointed out, such methods of administration do not introduce sugar into the blood faster than an approximate rate of 1 8 gm per kilogram and hour at most, which is not sufficient to permit much glucose to escape utilization Hence, after such administrations, unburned sugar does not accumulate in the tissues except to a limited extent, and they are not diuretic except in cases with decreased rates of sugar utilization (diabetes) Intravenous injections may exceed this rate, and so cause, in addition to the ordinary chemical effects of glucose, new physicochemical effects due to the presence of unburned sugar molecules in the tissues, and expressed outwardly as diuresis Now glucose and levulose have long been found useful when given in cases of diabetic coma, especially when given intravenously In such cases either mode of administration produces great diuresis, but especially levulous by vein (for levulose the *normal* intravenous tolerance limit being only 0 15 gm per kilogram and hour) It has not yet been recognized that the value of this treatment is due to the diuresis, but we have on other occasions given the reasons which make us believe that this is the case In 1907, Fleig[1] made roughly timed intravenous sugar injections, was struck by the remarkable diuresis, and realized possible clinical applications, without making any, however Kausch,[2] in 1911, recommended and attempted intravenous nutrition with glucose in hysterical vomiting hyperemesis gravidarum, surgical conditions and acute gastro-intestinal disease, but laid no emphasis on the diuretic action Fischer[3] recommended intravenous glucose injections in conditions of edema, nephritis and intoxication; but especially oligurias and anurias of various sorts on the basis of his observations concerning the power of sugars to dehydrate colloid gels and on their parallel diuretic effects in rabbits and men, thus bringing the behavior of sugars in these respects into relationship with that of diuretic salt solutions and recognizing the physicochemical principles which underlie the beneficial effects of intravenous injections of sugar In 1914, Henriques[4] reported the use of from 250 to 300 c c of 30 per cent glucose solution in the hour to about fifty clinical cases of heart disease, intoxication, and severe infections, finding special indications in oligurias of nephritis and heart disease He did not discuss the principles involved This year Turrettini[5] has given details of three cases of acute nephritis and three of mercuric chlorid poisoning, in all of which the urinary output was favorably affected Experiments have been in progress in this laboratory for some time to determine the limits of application of these principles and the present technic of administration to different grades of experimental poisoning with mercuric chlorid, arsenic and diphtheria toxin The system is being tested in the clinic as opportunities offer Its chief application would appear to be in acute intoxications of various sorts, acute oligurias and anurias, intoxication of pregnancy, and in cardiac and other edemas Further work is in progress on other diuretics besides sugars and on other sugars besides glucose, and also with simultaneous injections of sugars and salts, such as acetates and bicarbonates

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SIGNIFICANCE AND PREVENTION OF AMEBIC INFECTIONS IN THE MOUTHS OF CHILDREN *

ANNA WESSELS WILLIAMS, M D
ANNA I VON SHOLLY, M D
CAROLINE ROSENBERG, M D
AND
ALICE G MANN
NEW YORK

From time to time during more than half a century, a protozoan genus called *Ameba* by some, and *Endameba* or *Entameba* by others, has been reported as occurring chiefly about the gum margins in the oral cavity of human beings

Few details of the morphology, comparative incidence and pathogenicity of the members of this genus have been given Until last year, most, if not all of the species, were thought to be nonpathogenic Indeed, of so little worth were they considered that no mention of their presence is made in the general histologic review of parasitic amebas of man by several authors, who used the term "parasitic amebas" as synonymous with "intestinal amebas"

Thus Craig says

> There is no experimental evidence connecting *Ent buccalis* (or the mouth ameba) with disease It is very doubtful if it has anything to do with caries of the teeth, although it is most frequently encountered in the cavities of carious teeth However, it may be frequently demonstrated in material scraped from the roots of perfectly normal teeth so that, as far as the evidence goes, we must regard *Ent buccalis* as only a secondary invader The amebae known as *Ent gingivalis*, Gross, 1849, and *Ent dentalis*, Grassi, 1879, are probably identical with *Ent buccalis* and do not merit separate description

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[1] Fleig Compt rend Soc de biol, 1907 lxiii, 190

[2] Kausch Deutsch med Wchnschr, 1911, xxxvii 8

[3] Fischer, M H Edema and Nephritis New York, John Wiley & Sons 1915

[4] Henriques, E Presse med 1914, xxii, 121

[5] Turrettini Rev med de la Suisse romande 1915, xxxv 204

* From the Bureau of Laboratories, Department of Health, New York City

* Read before the Section on Preventive Medicine and Public Health at the Sixty Sixth Annual Session of the American Medical Association, San Francisco June 1915

In 1914, Smith and Barrett, followed by Bass and Johns and several other investigators, asserted that mouth amebas occurred chiefly in cases of pyorrhea alveolaris or Riggs' disease, and that they were the probable cause of this common septic infection of the jaws Other observers have not agreed with this assertion because sufficient evidence has not been given by its authors to make us sure of the types of amebas found and of the extent, if any, of their pathogenic action So several hypotheses may be formulated as to the part thought to be played by amebas in mouth infections

HYPOTHESES IN REGARD TO ACTION OF AMEBAS IN HUMAN MOUTHS

1 Amebas are accidental invaders, they produce no pathogenic or other reaction in the mouth (Provazek Hartman and others)

2 Amebas in the mouth have a beneficent action as scavengers (Chiavaro and others)

3 Amebas may be sometimes pathogenic, producing or helping to produce certain cases of pyorrhea alveolaris, certain abscesses and certain other mouth infections (Leidy, Gross, Flexner, Smith and Barrett and others)

4 Amebas are the specific cause of pyorrhea alveolaris (Bass and Johns and others)

5 Amebas may be pathogenic only in connection with certain other micro-organisms

The comparative worth of these hypotheses may be discussed as follows

In favor of the first hypothesis, that is, that amebas are accidental, nonpathogenic invaders, are the facts that amebas have been reported so frequently in apparently normal mouths and that when found in diseased conditions, they are always accompanied by other micro-organisms of pathogenic types, which might be sufficient to produce the disease Against it is the fact that they are found so much more frequently and in so much larger numbers in the lesions

As for the second hypothesis, that amebas are beneficent scavengers, there is no question but that amebas are scavengers both of other micro-organisms and of tissue host cells — at least, of leukocytes, red blood cells and broken down epithelial cells But they probably take up as many harmless as well as harmful germs and leave enough of the latter to exert their full power in harming the tissues of the host Then, too, since we know that certain amebas will live on brain, liver and kidney cells of human beings, there is no *a priori* reason to suppose that the mouth amebas will not help in destroying the fixed tissue cells in the mouth, especially after a certain amount of injury has been done them by other micro-organisms The evidence, then, is against this second hypothesis as it stands

As regards the third hypothesis, that amebas are sometimes pathogenic, we can only say that the large number of amebas in most cases of pyorrhea and in some abscesses of the jaw, and their infrequent presence in absolutely healthy mouths make this a tenable hypothesis

We may state, concerning the fourth hypothesis, that is, that amebas are the specific cause of pyorrhea alveolaris, that whether or not they are the specific cause of this condition can only be determined after further study Some facts brought forward in this paper bring new evidence on this point

In regard to the last hypothesis, that is, that amebas may be pathogenic only in connection with certain other micro-organisms, we must remember that if amebas absorb and digest fixed tissues as well as leukocytes, blood cells and other wandering cells, they may help decidedly in keeping up a lesion bacteria have started This fifth hypothesis is also tenable

ORIGINAL WORK

In order to help determine which, if any, of these hypotheses is correct, we have been trying to find out, first, how many children are infected and at what age the amebas begin to appear in their mouths, as well as to study the condition of the mouths showing the amebas Second, what types of amebas, if more than one, are present Third, the relation, if any, of these amebas to the diseased condition of the childrens' mouths, and fourth, the necessity and worth of preventive measures

We have begun our study by examining the mouths of the schoolchildren in one of the poorer districts of New York City We have already started the examination of a similar group in one of the more well-to-do districts At the same time, the Bureau of Laboratories of the New York City Health Department has begun a more general study of focal mouth infections, particularly of pyorrhea alveolaris

Soon after our observations on adults were begun, we found that all patients presented to us by the several dentists who are collaborating with us already had pus pockets formed in the jaw alveoli — that is, they were well-established cases — and when we began to inquire for beginning cases, we learned that the diagnosis of pyorrhea alveolaris is made by most dentists only after pus pockets can be demonstrated, so this added interest to our decision to hunt for beginnings in schoolchildren

So far 1,678 children (those in only one session of the school) between the ages of 5 and 15 years have had a preliminary examination, and from 995 representative ones stained smears have been made and examined for amebas The 1,678 children have been divided roughly into those having healthy gums and those with receding or spongy and bleeding gums The healthy looking gums are further divided into those with one or more decayed teeth, and those with apparently sound teeth Needless to say, we found very few of the latter, that is, of those with apparently healthy gums and sound teeth, and about one half of all showed unhealthy gums

From many cases, two smears were taken The smears were made as follows In the bad cases, the teeth and gums were cleaned with a cotton swab dipped in 50 per cent alcohol, then with the flat end of a hard wood sterile toothpick, material was scraped from the margin of the gums (there were no pus pockets in these children, so we did not need a scaler) and stroked lightly over a clean glass slide, three or four streaks being made The smear was then fixed while still moist by dropping methyl alcohol on it, and it was ready to send to the laboratory This was called the superficial smear A second toothpick was used to get material from beneath the margin of the gums, from which another smear was made and fixed This was called the deep smear In the cases with clean teeth and tight healthy looking gums, the first smear was made before the cleaning with alcohol All of these smears were stained with Giemsa's stain and examined for amebas Other stains have also been used in the more minute study of types of amebas In regard to the identification of amebas by stained films, we would say that they are more certainly and easily identified by this method than by warm living preparations, though, of course, both methods should be used in studying all of the characteristics of these micro-organisms In hunting for amebas in these smears, we have found that most of them seem to be between he superficial bacterial layer and the deep leukocytic layer, so one may find them only in large numbers in one small part of a smear, especially in a smear taken in a routine way

Stained by Giemsa, the delicately but definitely reticulated cytoplasm of the ameba stains a clear blue, while the small nucleus shows as a delicate rounded or irregular mass of red granules and threads, with often a central light blue staining karysome which sometimes contains a vacuole-like body This nucleus no doubt corresponds to that most frequently described for *Endameba histolytica-tetragena* There has been found no marked variation from this type of nucleus

Amebas are so notoriously variable in their entire morphology, according to their stage of development, and to the conditions of growth, that no definite opinion should be expressed as to the species of the forms found in these mouths until much further study has been made We may say, however, that there seem to be at least two morphologic types of amebas present one small, with more or less rounded, dense nucleus, with a few or no inclusions or vacuoles, found in the majority of healthy mouths, and the other large, with more irregular nucleus with many large vacuoles and containing many red blood cells, leukocytes and other dense masses formed by undigested material The latter type is found in the majority of unhealthy mouths Its appearance agrees with that of the type most frequently seen in the well-developed cases of pyorrhea alveolaris We have seen no cysts We have seen evidence of budding and of more equal division

NUMBER AND PERCENTAGE OF AMEBAS FOUND IN EACH GROUP OF CHILDREN

Condition of Mouth	Between 5 and 16 Years			Between 5 and 7 Years		
	Total		Amebas Present	Total		Amebas Present
1 Healthy gums	(+ 38) (— 92)	=	29 per cent.	(+ 3) (— 31)	=	9 per cent
2 Healthy gums decayed teeth	(+109) (—183)	=	37 per cent.	(+ 32) (—105)	=	23 per cent.
3 Tartar and receding gums	(+182) (— 96)	=	65 per cent	(+ 19) (— 17)	=	53 per cent
4 Spongy bleeding gums	(+268) (— 28)	=	91 per cent.	(+ 34) (— 5)	=	70 per cent

We have found that amebas begin to appear at a very early age, 35 per cent of children between 5 and 7 years of age being infected The numbers of those infected with amebas increase in frequency with age Between 5 and 15 years, 60 per cent show these protozoa on their gum margins In apparently normal mouths, only 29 per cent show amebas Taking the percentages by groups as in the accompanying table, the results are more significant

Finding the amebas so often in apparently healthy mouths and in such young children does not agree with the statement of Bass and Barrett that they are not found in healthy mouths Whether or not one or more varieties are taken from adult pyorrhea patients and are simply waiting their opportunity to exert a pathogenic action, we cannot yet say But the evidence seems to point toward the establishment of either the first or the fifth hypothesis already given

These results, however, as they stand, are very striking, especially when we must add that most of the cases of spongy and bleeding gums show more amebas in the films than the other cases If we could only rule out other micro-organisms, the evidence for the pathogenic action of the amebas would be stronger

We have, in these schoolchildren carriers of amebas, a marked opportunity to test the prophylactic effect of ipecac or its emetin alkaloid on mouth amebas

We have divided the cases showing amebas into three groups, one to be watched without treatment, and others to be treated in different ways, one with emetin and the other by ordinary cleanliness We have a tooth wash made up containing a dilution of emetin, and have the washing of the teeth done morning and afternoon in the school clinic under the supervision of the school nurse

The first examinations, one week after the beginning of this treatment, gave marked results, in that every child but one, receiving emetin, showed no amebas, while many of the others showed them In the later examinations, however, amebas were found in a few of the emetin-treated which were negative before, while a few more of the controls showed none

The following points have been brought out so far by these examinations

Amebas are demonstrated irregularly in all mouths once showing them, most constantly and in largest numbers in mouths showing gingivitis, least so in healthy mouths

With ordinary teeth cleansing methods, the number of mouths showing amebas is reduced one half With emetin in the tooth wash, the number showing amebas is greatly reduced, only about 10 per cent showing them The second set of controls — those doing their cleaning *at home* by ordinary methods — continue to show amebas in about 75 per cent of the cases

The question as to the amount of emetin to be used has not yet been settled We began with a 1 200 solution, then reduced it to a 1 400 strength Probably a much smaller amount would be sufficient to keep down the development of the amebas

We hope to carry on these investigations for several years and, if necessary, to extend the number of children included in the groups Whether or not we can demonstrate fully the efficiency of the use of an amebacide in preventing many cases of pyorrhea alveolaris remains to be seen We hope by combining these practical investigations with the laboratory studies that we may be able to help demonstrate the relationship of these amebas in septic mouth infections

ABSTRACT OF DISCUSSION

Dr. Woods Hutchinson, New York It is an interesting and important subject, especially in view of the effect of the organisms involved in later life. My impression is that we shall find that the diseases of the gums in later life bear the same relation to the infections of childhood that the diseases of so-called middle age do to the infectious diseases of younger life We elderly individuals, who ought to be Oslerized probably, are beginning to be terribly worried about diseases that attack us over 50 By taking proper steps we may very early remove the cause of our worries

The ameba in its relations with the pathogenic organisms may prove to be the keynote of the diseases and loss of teeth at an immature and undesirable time

Dr. C. C Bass, New Orleans I do not know of any other series of cases as large as that reported by Dr Williams Most examinations that have been reported and come to my attention have been in older people, practically all of whom were infected The study, then, of Dr Williams and her associates is especially valuable because it takes up the subject of the disease at a stage at which it could be prevented perhaps whenever we know enough about it, or cured before too great damage is done As to the pathogenicity of the amebas that we find in the mouth and in pyorrhea lesions the evidence at hand leaves the question somewhat open Many good authorities are confident that this ameba is not the cause of pyorrhea and does not play a part at all. Others are willing to grant that it may play a part Still others including ourselves feel certain that the chief specific cause of alveolodental pyorrhea is *Endameba buccalis* One of the things that we have observed we believe as certainly as any other thing is that these endamebas feed on certain nucleated cells that are to be found only in inflamed tissue If we make sections of the diseased tissue we find these same cells distributed not only on the surface, but actually in the inflamed tissue. Now for endamebas to get these cells they must crawl about or burrow about in the inflamed tissue searching for them We have been able to demonstrate and find the endamebas in the tissue and determine to what extent they burrow We find that they burrow for a distance many times their diameter, but possibly they do not burrow as deeply as the endamebas in amebic ulcers of the intestine do Not only do we find them in the tissue but we find them also on the surface of the closed ulcerated tissue in the bottom of the pyorrhea pocket In burrowing back and forth from the pyorrhea pocket and then into the tissue many different species of bacteria are transported or transplanted and retransplanted by the amebas Whether endamebas are present in all cases of pyorrhea we will be obliged to wait for further studies to determine until those working on the subject have acquired such technic as will permit them to make accurate negative diagnoses It is quite difficult to make an examination which justifies one in saying positively that the individual has not some endamebas present We may say he has no endamebas demonstrable by our technic but a microscopic lesion may be large enough to hold many endamebas We cannot give a mouth a casual macroscopic observation, and determine that there is no inflammation of peridental membrane around or between any of the teeth The disease begins between the teeth, where it cannot be seen After it is advanced, then we may see evidence of the disease labially or lingually It is difficult if not impossible to determine that an individual has a normal mouth The fact that some endamebas have been found and are found in what are called apparently normal mouths cannot be taken too seriously on this account. Our experience has been that in the examination of probably 500 individuals having pyorrhea we found endemebas in all of the patients after we had acquired the technic which seems to us quite necessary

Dr. Anna W Williams, New York Just such work as Drs Bass and Johns are doing in histologic biology will no doubt be of much aid in helping us to get more evidence in regard to the relationship of this organism to disease. In regard to the use of the toothpick, I would say that we simply use a toothpick in our routine examinations of the schoolchildren These children do not need a scaler since they do not have pus pockets We have only found one of the older boys having small pus pockets We use Young's dental scaler No 22 for obtaining material from the adult pyorrhea cases that we have studied

COMPLEMENT FIXATION IN DIAGNOSIS WITH BACTERIAL EXTRACTS PREPARED WITH DIGESTIVE FERMENTS

J O HIRSCHFELDER, M D
SAN FRANCISCO

In a preliminary report[1] in The Journal a method was described by me for the preparation of a soluble vaccine against the pneumococcus, and the evidence presented of its efficacy in producing active and passive immunity Ten cases of pneumonia treated with the extract were tabulated and reference was made to experiments with other micro-organisms Since then, extracts have been prepared with greater accuracy by improved methods and the immunizing effects have been made more constant At the same time, it has been found that these extracts are valuable as antigens in complement fixation for diagnostic purposes

PREPARATION OF EXTRACTS

As the standardization of bacterial suspensions by the known methods of counting is notably uncertain, a gravimetric method was devised based on their opacity as compared by means of a delicate photometer with that of a suspension containing a known quantity of the micro-organism as determined by its weight when dried at 110 C. The germs were grown in bouillon that had been passed through a Berkefeld filter and then autoclaved After growth, the culture was filtered through a Berkefeld and the germs washed several times with distilled water The bacteria were then gently rubbed off under a fine stream of distilled water with absorbent cotton on the end of a wire and the suspension well shaken

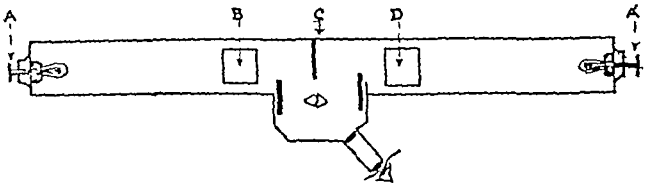

Diagram of light for determining amount of micro-organisms in suspensions See full description in text *A A* screw adjustment for lamp *B* standard bottle *C* Lummer Brodhun photometer *D* test bottle

A portion was weighed and dried at 110 C and the dry weight determined. Weighed portions of the suspension were diluted with measured quantities of distilled water until the opacity corresponded to that of the standard The amount of the dried bacteria in the standard could thus be readily calculated Conversely, it became easy to calculate the amount of the dry micro-organism in an unknown suspension by diluting to the opacity of the standard

The apparatus used consists of a Lummer-Brodhun photometer head to which two light-proof arms are attached, in each of which a small electric lamp can be moved back and forth by means of a screw After the light on the two sides has been equalized the standard test bottle is placed between the photometer and the lamp on one side and on the other side a measured quantity of the bacterial suspension to be determined in a tested bottle. This is then diluted with distilled water until the light which passes through both sides is the same. When this is the case, the suspension contains the amount of dry micro-organism represented by the standard All of the bottles used must be first tested optically when filled with distilled water The standard is made by using a suspension of electrosilicon in distilled water, which is allowed to stand a few hours to permit the heavier particles to sink. The fine suspension is then standardized optically with a suspension of the micro-organism equivalent to the desired amount of dried bacteria

In standardizing the pneumococcus, suspensions were used of washed living pneumococci of the types Rockefeller 1, 2 and 3, cultures of which had been kindly sent by the Rocke-

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[1] Hirschfelder J O The Production of Active and Passive Immunity to the Pneumococcus with a Soluble Vaccine The Journal A. M A Oct 12 1912 p 1373

TABLE 1—RESULTS OF COMPLEMENT FIXATION BY McNEAL'S AND BY AUTHOR'S ANTIGEN FROM GONOCOCCI

Patient	McNeal Antigen	Hirschfelder Antigen	Remarks
Qi	— — —	— — —	Acute gonorrhea
Ag	— — —	— — —	Sexual neurasthenia No gonorrhea
Rip	— — —	— — —	Syphilis No history of gonorrhea
Hut	— — —	— — —	Chronic prostatitis *Micrococcus catarrhalis* No history of gonorrhea
Gr	— — —	— — —	Syphilis No gonorrhea
Hof	— — —	— — —	Chronic prostatitis Previous gonorrhea, Wassermann positive
Go	— — —	— — —	Tabes. No history of gonorrhea
Ha	— — —	— — —	Prostatic hypertrophy No history of gonorrhea
Fa	— — —	— — —	Hydrocele No history of gonorrhea
Jor	— — —	— — —	Sexual neurasthenia No history of gonorrhea
Mrs S	— — —	— — —	No history of gonorrhea
Hag	— — —	— — —	Stricture of urethra No history of gonorrhea
Ric	— — —	— — —	No history of gonorrhea
Mrs R	— — —	— — —	Severe vaginal discharge No gonorrhea
Bonv	— — —	— — —	Sexual neurasthenia No gonorrhea
Br	— — —	— — —	Sexual neurasthenia No gonorrhea
Mrs L	— — —	— — —	No history of gonorrhea
Reg	— — —	— — —	Acute gonorrhea, five weeks
Ab	— — —	— — —	Sexual neurasthenia No gonorrhea
Haf	— — —	— — —	Acute urethritis without gonococci
Lar	— — —	— — —	Acute gonorrhea Epididymitis one year ago
Col	— — —	— — —	Sexual neurasthenia No gonorrhea
McM	— — —	— — —	Sexual neurasthenia No gonorrhea
Chr	— — —	— — —	Had gonorrhea two years ago None now
Lu	— — —	— — —	Sexual neurasthenia
Br	— — —	— — —	Had gonorrhea and used vaccine
Lev	— — —	— — —	Hydrocele No gonorrhea
Hor	— — —	— — —	Had gonorrhea three weeks
Ho	+ — —	+ — —	Chronic prostatitis No gonococci Previous gonorrhea
Hu	+ — —	+ — —	Had a discharge for two years No gonococci in smear
O'B	+ — —	+ — —	Chronic prostatitis No gonococci Previous gonorrhea
Pol	+ — —	+ — —	Acute gonorrhea Previous gonorrhea
Ge	+ — —	+ — —	Previous chronic gonorrhea Doubtful joint affection
Mur	+ + —	+ + —	Chronic prostatitis No gonococci in fluid
Mo	+ + —	+ + —	Acute gonorrhea May have had chronic
Ber	+ + —	+ + —	Had testicle removed Had several attacks of gonorrhea Prostatitis without gonococci
Nom	+ + —	+ + —	Chronic gonococcic prostatitis
Be	+ + —	+ + —	Chronic gonococcic prostatitis
Rip	+ + +	+ + +	Chronic prostatitis Epididymitis Gonococci present
Lon	+ + +	+ + +	Has been taking gonococcic vaccine twice a week
Dil	+ + +	+ + +	Gonorrhea for six months
Ha	+ + +	+ + +	Gonorrhea for eight months
Ha	+ + +	+ + +	Gonorrhea five years ago for seven months
Lin	+ + +	+ + +	Chronic prostatitis Gonococci
Sil	+ + +	+ + +	Subacute prostatitis and epididymitis Gonococci present
Mon	+ + +	+ + +	Subacute gonorrhea with gonococci
Bal	+ + +	+ + +	Chronic prostatitis. No gonococci in fluid
An	— — —	+ — —	Gonorrhea nine years ago
Bas	— — —	+ — —	Chronic prostatitis No gonococci in fluid
And	— — —	+ — —	Sexual neurasthenia Had gonorrhea but not at present
Gr	— — —	+ — —	Had gonorrhea five years ago None for three years
Far	+ — —	+ + —	Syphilis Had several attacks of gonorrhea
Man	+ — —	+ + —	Subacute gonorrhea with gonococci
Sed	+ + —	+ + +	Chronic gonococcic prostatitis No gonococci in fluid
Ces	+ + —	+ + +	Chronic gonococcic prostatitis Reinfection
Jen	+ + —	+ + +	Chronic gonococcic prostatitis

feller Institute The tests made with the three different pneumococci show how accurately the observations could be made

Pneumococcus Rockefeller 1

18 6071 dried at 110 C gave 0 0579
17 7126 dried at 110 C gave 0 0552
1 0 contains 0 00332 dry
1 1223 suspension diluted to 80 c c corresponds optically to standard
0 8844 suspension diluted to 64 c c corresponds optically to standard
Hence, 1,000 c c standard corresponds to 46 mg dry

Pneumococcus Rockefeller 2

19 3252 dried at 110 C gave 0 0512 dry
18 8286 dried at 110 C gave 0 0490 dry
1 0 contains 0 0026 dry
1 0427 suspension diluted to 60 c c corresponds optically to standard
0 9498 suspension diluted to 58 c c corresponds optically to standard
Hence 1,000 c c standard corresponds to 45 mg dry

Pneumococcus Rockefeller 3

18 2440 dried at 110 C gave 0 0488 dry
18 3318 dried at 110 C gave 0 0491 dry
1 0 contains 0 0027 dry
0 9460 suspension diluted to 60 c c corresponds optically to standard
1 1075 suspension diluted to 70 c c corresponds optically to standard
Hence 1,000 c c standard corresponds to 45 mg dry

In the preparation of the pneumococcic extract a suspension of living washed pneumococci was taken such that it corresponded optically to 1 8 gm dry to 1,000 c c This was heated to 38 C and an equal quantity of a solution of 0 2 per cent Cudahy Pancreatin and 2 per cent sodium bicarbonate also heated to 38 C was added The mixture was allowed to stand at 38 C for fifteen minutes and then barely acidulated with pure hydrochloric acid until the development of gas on the addition of acid ceased It was then filtered through a Pasteur filter which made it germ free and sterile When it was to be employed as an *antigen* it was simply put into small sterile bottles and kept in an ice chest For experimental and therapeutic purposes 0 1 per cent tricresol was added in order that it might be handled without fear of infection The tricresol was used only after it had been determined by experiments on rabbits that absolutely no interference with the immunizing properties of the extract was thereby produced

The effect of the action of the alkaline pancreatin on the pneumococci was absolutely inappreciable, for although immunizing substance was extracted, as will be shown in a later communication, the staining properties, the viability in culture and the virulence of the pneumococci were unchanged It was repeatedly proved that pneumococci so treated killed rabbits injected with them just as the untreated pneumococci did They could be grown from the heart's blood of the animals that died in exactly the same manner

Extracts of the gonococcus, streptococci, staphylococci, *Streptodiplococci rheumaticus* (Poynton-Payne), streptodiplococci of endocarditis and similar cocci were made in the same manner

With the members of the typhoid group like typhoid, colon hog cholera, it was found that although some results were obtained by extracts that had been subjected to the digestive process for fifteen minutes, better were given by such as had been acted on for thirty minutes, whereas longer periods gave less potent extracts Hence for this type of micro-organism thirty minutes was the period used as a routine

With tubercle extract the method employed was somewhat different, although the principle involved was the same After the germs had grown they were strained through cheese-cloth and thoroughly washed with distilled water The mass was partially dried with filter paper A weighed portion was dried at 110 C and a portion of the moist living bacilli, corresponding to 2 gm dry, was mixed with 500 c c distilled water heated to 38 C To this 500 c c 0 4 per cent Cudahy pepsin in 0 6 per cent HCl heated to 38 C was added and the mixture allowed to stand at 38 C. for three hours It was then made faintly alkaline to phenolphthalein with sodium carbonate and filtered through a Pasteur filter For use as an antigen the germ-free sterile fluid was simply bottled, whereas for experimental and therapeutic use 0 1 per cent. tricresol was added When correctly prepared, 20 c.c should kill a highly tuberculous guinea-pig weighing 250 gm within twenty-four hours, with a reaction consisting of hemorrhages in and about the tuberculous deposits, 15 c c. should not kill the animal, but should produce the reaction, which can be found by killing the animal and making a postmortem examination

This tubercle extract is entirely different from tuberculin in its qualities It is destroyed by heating to 100 C., which is not the case with tuberculin In making the extract it was found that digesting for three hours gave a more potent extract than when the ferment acted for a shorter or a longer period

TABLE 2—COMPLEMENT FIXATION IN TUBERCULOSIS

The antigenic unit of the bacterial extract of a single strain employed was 0 5 c c

Patient	Complement Fixation	Tubercle Bacilli in Sputum	Remarks
Br	— — —	—	Mother had tuberculosis.
Miss Ha	— — —	—	Mother had tuberculosis
Kel	— — —	—	Pronounced tuberculous by three doctors.
Mrs L	— — —	—	Heart disease Physical signs and roentgenogram negative.
Dr	+ — —	+	Advanced tuberculosis. Wassermann + + +
Mrs Gr	+ — —	+	Moderate tuberculosis.
Mrs. Led	+ — —	?	Tuberculosis found two years ago
Mrs. Gn	+ — —	+	Tuberculosis
Ha	+ + —	—	Spinal tuberculosis.
Miss McD	+ + —	+	Tuberculosis. Has been taking tubercle extract
Gs.	+ + —	+	Moderate *tuberculosis*
Mil.	+ + —	+	Advanced tuberculosis.
Sim	+ + +	+	Tuberculosis two years.
Miss Br	+ + +	+	Advanced tuberculosis
Mrs L	+ + +	+	Advanced tuberculosis.
Mrs H.	+ + +		Has had tuberculosis four years. Is taking tuberculin.
Pal	+ + +	+	Advanced tuberculosis.
Le.	+ + +	+	Tuberculosis treated with extract.
Mo	+ + +	+	Moderate tuberculosis.
Mar	+ + +	+	Tuberculosis.
Lan	+ + +	+	Tuberculosis four years.
Ur	+ + +	+	Tuberculosis.
Baby Ta	+ + +	—	Tubercle bacilli in feces.
Nel	+ + +		Tuberculous glands removed
Eis.	+ + +	—	Tuberculous glands
Miss La	+ + +	—	Tuberculous glands.
Mrs. H	+ + +	—	Tuberculous glands.
He	+ + +	—	Bone tuberculosis operated
2 Rabbits	+ + +		Experimental eye tuberculosis.
3 Rabbits	+ + +		Experimental eye tuberculosis treated with extract
Normal rabbit	— — —		

Work is being done with numerous other micro-organisms, including the *Spirochaeta pallida* as there is every reason to believe that the principle of extracting the end-body unchanged applies to all bacteria

All of the ferments of digestion will act but for different types some seem better than others although it is probable that special methods could be worked out with each which would give as good results as any of the others

In the preparation of the various antigens accurate standardization of the micro-organisms is not necessary Any moderately thick suspension may be used and an equal volume of the solution of the digestive ferment added according to the method described above Of course, it is necessary in each case to determine the antigen value just as is done in making the ordinary Wassermann test.

With the discovery of the principle of complement fixation of the bacterial antibodies by Bordet, the possibilities of diagnosis entered on a new era The investigations on the subject that have been made since then have fully confirmed the correctness of Bordet's conclusions Practical results of great value have been achieved with the gonococcus, mainly through the work of McNeal and Strauss With the other micro-organisms, however, the diagnostic value of the method has not met with general acceptance, as the results have been rather variable It has seemed probable that this has been due to the difficulty of obtaining a good antigen and not to any incorrectness of the fundamental principle As investigation with extracts of numerous micro-organisms made with digestive ferments and with the bacteria after extraction indicated that the substance extracted was not an autolyzed product but the real end-body, it was

TABLE 3—STREPTOCOCCUS

The antigenic unit of an extract of mixed streptococci was 0 5 c c

Patient	Complement Fixation	Remarks
Miss L	+ + +	Has been taking streptococcic extract
Dr J	+ + +	Streptococcic infection of finger Took streptococcic extract
Miss L.	+ + +	Abortion terminating fatally Streptococci isolated from blood
Ster	+ — —	Chronic rheumatism
St	+ — —	Chronic rheumatism
McQ	+ + —	Chronic rheumatism
Pet	+ + —	Chronic rheumatism
Mrs C	+ + +	Chronic rheumatism
Gr	+ + —	Chronic tonsillitis.
Miss S	+ + —	Chronic tonsillitis
Dav	+ — —	Neuritis
Noc	+ + —	Neuritis
Mrs W	+ + +	Retained gauze in abdomen following operation Removed and pus found No report of bacteriologic findings

TABLE 4—TYPHOID

The antigenic unit of an extract of mixed bacilli was 0 5 c c

Patient	Complement Fixation	Remarks
Ar	— — —	Appendix abscess.
Laz.	+ — —	Appendix abscess not examined to determine whether he was a typhoid carrier no history of typhoid
Crow	+ + —	Infarction of the lung No history of typhoid Not examined to determine whether he was a typhoid carrier
Cr	+ + +	Temperature for three weeks as high as 104 F Widal negative. No further observations.
Bel	+ + —	Child with typhoid
Byr	+ — —	Convalescent typhoid.
Sun	+ + +	Had taken typhoid vaccine four months ago
Cos	+ — —	Had taken typhoid vaccine three years ago
Four	+ + +	Had typhoid in January 1914 Took typhoid vaccine in February 1915
Car	— — —	Had irregular fever ambulatory Suspected typhoid Widal negative. No further observations
Hor	+ + +	Widal negative Found three days later
B	+ + +	Widal negative. Found two days later
Fr	— — —	Suspected typhoid ambulatory Did not develop
Cr	— — —	Suspected typhoid Meningitis with meningococci
Bo	— — —	Suspected typhoid Proved to be malaria
Na	— — —	Suspected typhoid Had tubercle bacilli in sputum
Si	— — —	Suspected typhoid Had temperature for three weeks. Proved to be stone in kidney
Ak.	— — —	Suspected typhoid. Widal negative. Died of tuberculous meningitis
Laz.	— — —	Considered typhoid Widal positive. Proved to be spinal meningitis with tubercle bacilli in spinal fluid
Mrs. M	— — —	Considered typhoid Proved to be tuberculous meningitis. Confirmed by post mortem
Rob	— — —	Temperature for some weeks Diagnosticated typhoid Wassermann found + + + Rapidly cured by antisyphilitic treatment.

thought probable that the extract would be an efficient antigen The tests thus far made have warranted this opinion As the antigens are very easily and rapidly made in any laboratory, it is to be hoped that further trial will be made by others

The following results shown in the tables in complement fixation with the various antigens prepared by the action of the digestive ferments on washed living bacteria according to the method described, were obtained by Dr Edward Johnson and Mr George Gillnan of the Pacific Wassermann Laboratory Great credit is due them for the careful manner in which they observed all the precautions and used all the ordinary controls employed in the Wassermann tests

one-half hour, and gave positive results It was tested on one case of pneumonia only just before the crisis and gave + + + fixation The antigenic unit was 0 1 c c

RHEUMATISM

A small number of cases of rheumatism were investigated serologically with extracts of various micro-organisms The extract of the Poynton and Payne *Streptodiplococcus rheumaticus* was made from a single strain Its antigen unit was 0 3 c c The extract of the streptococcus of endocarditis was also made from a single strain Its antigenic unit was 0.2 On testing with the extract of another strain of the same

TABLE 5—COMPLEMENT FIXATION WITH ANTIGENS FROM VARIOUS MICRO ORGANISMS

Patient	Pneumococcus	Tuberculosis	Gonococcus	Streptococcus	Streptococcus Viridans *Endocarditis*	Diplostreptococcus Rheumaticus Poynton & Payne	Wassermann	Noguchi	Remarks
Pet	———	———	+——	++—	———	———	———	———	Had gonorrhea four years ago, lasting two weeks A year ago rheumatism began Gonorrhea two months ago Was first given gonococcus extract without effect. Was then given streptococcic extract with rapid improvement and cure
McQ	———	———	———	++—	———	———	———	———	Chronic rheumatism rapidly improved and cured by *streptococcic extract*
St.	———	+——	———	+——	———	———	———	———	Extensive arthritis deformans of long duration Slight tuberculosis
Mor	———	———	———	++—	++—	———	———	———	Chronic rheumatism for one year Not treated
Rey	———	———	———	+——	++—	+——	+——	+——	Arthritis deformans of twenty years' standing
K	———	———	+++	+——	———	++—	———	———	*Acute rheumatism in childhood to the age of 14* Again at 18 and again three years ago, followed by gonorrhea Improvement following extract of *Streptococcus rheumaticus* (Poynton and Payne)
Miss F	———	+——	———	———	———	+——	———	———	Chronic rheumatism Roentgen ray shows *infiltration of glands* at the root of the lung Rapid improvement after extract of *Streptococcus rheumaticus* (Poynton and Payne)
Kr	———	———	———	+——	+——	++—	———	———	Chronic rheumatism Not treated
W	———	———	++—	———	———	———	———	———	Gonorrhea five years ago, lasting seven or eight months. Rheumatism began *three months ago Improvement following* gonococcic extract
Ols	———	———	———	———	———	———	———	———	Acute gout of right upper extremity Numerous nodules in both ears
Bick	———	———	———	+——	++—	+++	———	———	Acute rheumatism improved following injections of rheumaticus extract so that he walked around and the extract was continued Ten days later a relapse as severe as the original attack occurred, showing he was not immunized
Pip	———	———	———	———	+——	+——	———	———	Acute rheumatism Rapid cure f ing extract rheum

GONOCOCCUS

In the subjoined table (Table 1) the res complement fixation with the McNeal antigen an extract prepared with pancreatin from ing gonococci are presented Most of th been observed by Dr Martin Krotoszyne genic unit employed was 0 5 c c of extract

STAPHYLOCOCCUS

Tests were made in two cases only o furunculosis and gave positive results with antigen prepared from culture o in the furuncle of one of the patients unit was 0 5 c c

PNEUMOCOCCUS

Antigen prepared from a single str on several rabbits that had previously with cultures of the same strain heate

will be shown in a unication, the staining properties, the viability in ure and the virulence of the pneumococci were unchanged It was repeatedly proved that pneumococci so treated killed rabbits injected with them just as the untreated pneumococci did They could be grown from the heart's blood of the animals that died in exactly the same manner

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With tubercle extract the method employed was somewhat different, although the principle involved was the same After the germs had grown they were strained through cheese-cloth and thoroughly washed with distilled water The mass was partially dried with filter paper A weighed por-

AN AMEBA IN SUPPURATIVE AND HYPERPLASTIC OSTEOPERIOSTITIS OF INFERIOR MAXILLA *

KENNETH M LYNCH, MD
CHARLESTON, S C

In 1896 Flexner[1] reported an ameba found in artificially obtained pus from an abscess on the floor of the oral cavity Doflein,[2] in 1901, observed a similar ameba in an abscess with fistulas opening on the right lower jaw The latter case resembled, somewhat, the following, although there are certain differences in the two parasites observed

History—E W, a negro woman aged 23 servant admitted to the Roper Hospital in Charleston, April 20 1915 beginning about one year before had frequent attacks of toothache The lower jaw on the left side began to swell about a month previous to admission when she exhibited a hard nonmovable tumor the size of a hen's egg attached to the inferior maxilla Nothing abnormal was noted in the mouth or throat. The cervical lymph nodes were palpable The temperature, normal in the morning went up to 99 and 100 in the evening

A diagnosis of osteosarcoma was made and the left half of the mandible resected and sent to my laboratory

Examination of Specimen—From articulation to canine tooth the bone was thick with rough surface into which ran small clean-cut sinuses containing thick white granular pus The thickening was most prominent about the middle of the body of the bone where it was of tumorous appearance. Over this prominent portion on the outside was a hard fibrous mass attached to the bone and to the surrounding muscles In this were several larger sinuses leading into the bone Saw cut revealed the bone to be of a compact cancellous nature, like new growing bone honeycombed with small pus sinuses The first molar tooth was missing and the third was represented by a decayed root, level with the soft tissues of the gum.

Microscopically the composition of the tumor mass was of newly formed and forming bone trabeculae fibrous tissue, mainly old, encroaching on surrounding muscle lymphocytic infiltration, largely in localized foci and small areas of necrosis and pus in which were rounded hyaline nonnucleated bodies somewhat larger than leukocytes The appearance was that of inflammatory overgrowth of bone and connective tissue of a progressive nature showing areas of necrosis and pus formation corresponding to the previously mentioned sinuses

Microscopic examination of the pus revealed no recognizable bacteria, nor did animal inoculation give any results It contained in addition to granular materials, neutrophilic leukocytes and a goodly number of eosinophils some recognizable tissue cells and numerous ameboid cells These when rounded were about 40 microns in diameter, with a distinct clear ectoplasm and coarsely granular endoplasm of refractile bodies No nucleus was recognizable. These cells were ameboid throwing out, slowly large broad single pseudopodia which were seen to engulf red blood cells and leukocytes The cell moved from place to place by projecting one of these pseudopods into which the endoplasm flowed, it then becoming the body

Stained with Leishman's fluid the cytoplasm was very faint vacuolated, and contained red blood cells and fragments of leukocytes No nucleus was observed Unfortunately, these specimens were destroyed before I had completed my study of them or had opportunity to use other stains

That this ameba was not of those commonly found in the mouth was plain to me because of its size, activity, character of endoplasm, and staining properties It differed from Doflein's parasite in that it was sluggish in action and exhibited single large blunt pseudopodia and a distinct differentiation of ectoplasm from endoplasm, while the latter was more active than those of amebic dysentery and developed long fingerlike pseudopodia of apparently the same appearance as the protoplasm in general

Doflein conjectures that both his and Flexner's parasites were dysenteric amebas, although there was no history of dysentery in either case Neither was there history of dysentery in the present instance, and the variance in morphology of the ameba connected with the history disputes such an opinion in this case

That the ameba was the etiologic factor here cannot, of course, be said, but the absence of any other recognizable factor, the nature of the growth, the history of onset and the decayed tooth as a possible port of entry, lend the suggestion

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* From the Department of Pathology and Research Medicine Medical College of the State of South Carolina

[1] Flexner Bull. Johns Hopkins Hosp 1892 No 25

[2] Doflein F Die Protozoen als Parasiten und Krankheitserreger Jena 1901 p 30

THE SUGAR CONTENT OF THE BLOOD IN CERTAIN DISEASES OF THE SKIN

A PRELIMINARY REPORT *

I R PELS, MD
BALTIMORE

Since it is well known that diseases of the skin, such as furunculosis, occurring in various areas of skin are associated at times with a transient or even a permanent glucosuria, as in diabetes mellitus, and since it is known also that a hyperglycemia may be present, under certain conditions even in the absence of a glucosuria, it occurred to me that it might be of interest to make investigations along these lines in certain dermatoses

It was intended to ascertain, if possible, any changes from the normal, in those conditions in which the cause, or underlying etiologic factor, was more or less unknown The tests, therefore, were made merely to answer the question whether there was an increase or a decrease in the sugar content of the blood, compared with the normal

The cases were selected at random, but in practically all it could be assumed that there might be some disturbance in metabolism or some systemic disorder The patients were selected from both sexes at the outpatient service of the Johns Hopkins Hospital, and nearly all were white adults The blood was obtained, invariably from a vein in the forearm, approximately from one to three hours after the last meal eaten This probably had some influence on the degree of glucose percentage The urine was examined in every instance The specimens were obtained after the venipuncture, and were examined at once for albumin by the heat and acid test, and for glucose by the copper sulphate-alkaline test (Fehling)

The method employed was a modification of the Benedict-Lewis procedure, as proposed by Epstein,[1] and carried out by specially designed apparatus This method was found to be satisfactory because of its convenience, simplicity, and rapidity of execution It was tested against the original Benedict-Lewis method

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* From the Department of Dermatology the Johns Hopkins University and Hospital.

[1] Epstein A. A An Accurate Microchemical Method of Estimating Sugar in the Blood, The Journal A M A. Nov 7 1914 p 1667

Aside from the two cases mentioned, we had no disagreeable complications, except those mentioned above and observed by everybody else They evidently constitute the regular clinical picture following the neosalvarsan injections, being, as it were, a clinical reaction to the latter They are pointed out by Swift, who says that a given dose may be well tolerated several times, but later may be followed by severe symptoms He recommends, therefore, extreme caution in the injections and a dose not exceeding 0 5 mg With such a small dose, Swift obtained in three patients out of thirty-four (the rest usually received intravenous and intraspinal injections together) quite encouraging results from the biologic standpoint (favorable changes in the cerebrospinal fluid) About clinical changes, Swift says only that he was "struck with many instances of parallelism between condition of the spinal fluid and general condition of the patient"

Giving intraspinal injections of neosalvarsan, I was interested not so much in the possible biologic changes of the spinal fluid as in clinical changes, which unfortunately were *not very favorable, in spite of the large and repeated doses* The results, I must confess, were in the majority of cases much better from internal administration of plain arsenic, of arsenic trioxid, given in large doses according to a method used in the treatment of chorea and described by me some time ago[6]

I have been using this method in my private and dispensary patients in the form of a 1 1,000 solution of arsenic trioxid (arsenic trioxid, 0 12, diluted hydrochloric acid, enough to dissolve, distilled water, 120 0), which is given once a day, after a meal, beginning with half a teaspoonful well diluted with water During the following days the dose is each time increased by a half a teaspoonful until 6 or 7 teaspoonfuls are given to one dose (always well diluted with water), after which the dose is daily decreased by one half teaspoonful until the initial dose of one half teaspoonful is reached If no changes in the patient's state are noticed, or no complications of the stomach (vomiting) or the urine (albumin) are present, the arsenic treatment is renewed in ascending doses until three or four or more courses are given

That arsenic given internally may reach the nervous system is proved by a case of Comby,[7] whose patient, a 7-year-old girl, took in eleven days 4 grams of arsenic, and developed a myelitis (paraplegia, incontinence of bladder and rectum, etc), of which the child recovered within three weeks This method is practically devoid of any danger, as I never met any serious complications in spite of the fact that it was used in small children Of late, I began to use the same method also on my county hospital patients instead of neosalvarsan injections, and had in many cases results not worse if not better than from neosalvarsan therapy

31 North State Street

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[6] Hassin, G B, and Hershfield, A S The Treatment of Chorea with Large Doses of Arsenic, Med Rec, New York, 1910, lxxviii, 15

[7] Comby Lançette française, Gaz d hop, 1896, No 83, p 834

School Medical Examination—The Supreme Court of South Dakota has decided that a regulation of the school authorities of Aberdeen requiring that each child seeking admission to the schools must furnish a "physical record card" signed by a physician, was reasonable and valid, that it did not unlawfully bar any pupil from the schools, and that the school board had authority to adopt such a regulation —*Public Health Reports*

VACCINE TREATMENT OF GONORRHEA*

CARL C WARDEN, MD
ANN ARBOR, MICH

In a recent paper[1] I reported experiments on the gonococcus from which the following observations were made

Autolysis is an invariable character of the gonococcus in the presence of excess of water, and is due probably not to enzyme activity, but to water hydrolysis and solution By autolysis, I mean the solution or disappearance of the cocci which always occurs in the presence of excess of water, whether the water be in the culture medium, in the menstruum used for the preparation of a vaccine, or in the tissues of animals

The process of autolysis, which is favored by the delicacy of the limiting surface and by the easy vulnerability of the coccus and its ready permeability by water, consists in edema followed by liberation of protein, or protein split products, compounds containing phosphorus, and fats

The gonococcus protein, comprising 75 per cent of the entity of the organism, is liberated into the salt solution or water during autolysis, and at first exists in chemical forms representing the sum of metabolic activity at the moment of liberation, but which undergoes fairly rapid changes in character, either by water hydrolysis, by the action of ferments not killed by high temperature, or by other agencies, so that in a short time the organic nitrogen has largely lost its identity as gonococcus protein and has assumed simpler chemical form

The fats of the gonococcus, obtained as fatty acids, neutral fats and lipoids, are of large bulk, and a considerable proportion of the former are volatile and soluble in water and salt solution

Suspensions of gonococci in water or in salt solution, as in the preparation of antigen and vaccines, undergo rapid, almost immediate, autolysis, accompanied by the changes above mentioned, at all temperatures below the coagulation point of protein Heating at 60 hastens the process, while 70 coagulates the proteins

Fresh suspensions or autolysates are fatal to guinea-pigs The toxicity declines rapidly to a fairly constant level, then ultimately disappears The toxicity appears to be associated in measure with the *character* of the nitrogen rather than with the quantity

I have shown that fresh, live gonococcus culture suspended in water or salt solution and injected intravenously or otherwise into laboratory animals shows a toxicity almost inversely proportional to the length of time the cocci have been in suspension, being greatest within the first few minutes, diminishing rapidly by hours and days, and finally disappearing altogether During this time the gonococci show, microscopically, progressive disintegration, swift at first, then more deliberate, until finally there are no cocci to be found As I have shown, heat and chemicals may modify or check these changes, but only by damage to the cocci in other ways Freshly prepared gonococcus vaccines are therefore toxic, while aged vaccines are inert

Autolysis of whole gonococcus also occurs on wet culture mediums, in serum, normal, immune and mactreated, in all electrolytic solutions in which cell permeability is increased, and in all cavities and tissues of laboratory animals Autolysis is prevented by alcohol, by electrolytic solutions of high ionic content, by fatty substances, by soaps and by hygroscopic nonelectrolytes, such as glycerin and syrup

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* Read before the Section on Genito Urinary Diseases at the Sixty Sixth Annual Session of the American Medical Association, San Francisco, June 1915

[1] Warden, Carl C *Jour Infect Dis*, May, 1915

The viability of the gonococcus may be maintained for days in glycerin, lanolin, and cold cream, at room temperature I believe such anhydrous substances to be frequently responsible for the dissemination of gonococcus infections

It will be observed that gonococcus suspensions in water or salt solution are not unlike sterile autolysates of other cells, and consist of substances much changed from their former character in the living cocci A question of importance is to what extent such suspensions may be expected to create active immunity in animals I know of no way by which whole unautolyzed or live cocci may be introduced into an animal except by suspending them in glycerin, fats or neutral oils, or by transferring fresh culture material directly to the tissues By all methods lysis occurs in the animal in the same manner as in water or serum in vitro Animals immunized with gonococcus suspensions in water or salt solution and with autolysates yield serum containing quite variable amounts of agglutinin, no definite germicidal substance, and irregular opsonic power The immune serum fixes complement with gonococcus antigen, which is merely gonococcus autolysate It is probable that the lysis following the introduction of live, unautolyzed gonococci into laboratory animals is of the same nature as that occurring in serum in vitro Numerous observations on intraperitoneal lysis have shown that the primary products of dissolution act as aggressins The cocci quickly enter the circulation and are found in the liver and spleen in all stages of lysis, but rarely within the leukocytes It is probable that the immunity response to gonococci in animals gives true gonococcus antibodies only in part, the remainder, if any, being antibodies to products of lysis In speculating on the role of gonococcus nitrogen in the body, a question rises whether the administration of vaccines in gonorrhea may not produce antibodies to the products of autolysis in large measure, and to true gonococcus antibodies in less It is doubtful whether vaccine (autolysate) given to man and other animals occasionally produces substances in the serum which fix complement with gonococcus antigen (autolysate) By this I mean that the administration of vaccine to a normal individual or to one suffering from gonorrhea, does not of itself bring about a positive complement-fixation test with the serum of that individual Fixation of complement with the serum of individuals with gonorrhea does not occur until a stage of the disease is reached, the sixth to the eighth week, when probably lysis of the cocci in the tissues has begun or is increased Such an assumption is certainly admissible, from the foregoing evidence

Now, if the immunity response to vaccines is directed more against the products of lysis than against true gonococcus antigen, it is not unlikely that such antibodies may merely neutralize the products of lysis occurring from cocci at the site of disease[2]

Not all vaccines are prepared in the same manner, but there are objections to all Washed cocci have undergone extensive lysis with consequent liberation of fats and nitrogen, as I have shown by chemical examinations of the wash water Repeated washing occasions further loss until nothing but granular material remains It can readily be seen that the standardization of gonococcus vaccine by the method of counting is impossible save when the cocci have been altered, or fixed, by heat or chemicals Suspensions heated to 60 show autolysis hastened, and 70 coagulates the proteins[3]

In sensitized vaccines the cocci have yielded products to the serum, and there is no evidence to show that they have gained antibody from the serum Such vaccines are merely gonococcus residue Abundant evidence has shown me also that unautolyzed vaccine is toxic and only slightly greater in antigenic value than ordinary vaccine My studies on autolysis led me at one time to believe that if a vaccine of whole, unautolyzed, unchanged gonococci could be produced, better results would be obtained in the treatment of gonorrhea by such a vaccine Accordingly, I learned first how to cultivate the gonococcus free from autolysis, and later how to preserve the whole cocci in anhydrous menstruums Vaccines were made of quickly dried gonococcus substance suspended in neutral oil, others of fresh unautolyzed cocci in pure glycerin and in neutral oil, and all were thoroughly tested out on animals and patients In all cases, the results were the same, all were toxic, the glycerin vaccine more so than the oil, and appeared to have no effect whatever on the course of the disease On the other hand it was plainly shown that whole, unautolyzed cocci, alive or killed, underwent autolysis when introduced into the tissues of the body exactly in the same manner as in fluids in the test tube, followed by toxic manifestations, local or general, slow or rapid, according to whether the menstruum employed was oil or glycerin

The beneficial results following vaccines in gonorrheal rheumatism, for which there is some evidence, might appear to be contradictory to the ideas above expressed, were it not possible to explain them on the same hypothesis Not infrequently, especially with freshly prepared vaccines, it has been noticed that the reactions following their administration to patients include pain in the joints In animals inoculated with water suspensions I have noticed stiffness and apparent tenderness of joints, although no gross changes could be found Serum from patients with gonorrheal rheumatism gives the largest proportion of complement fixation The serum of goats immunized with fresh gonococcus suspensions in salt solution gives a precipitin response with gonococcus autolysates, fresh and heated to 75 This evidence, though inconclusive, nevertheless suggests that conditions about the joints may be more favorable to lysis of the cocci than in the tissues of the urethra, and that the products of lysis may contribute to the symptoms The relief of pain following gonococcus vaccines is one of the most conspicuous results Without carrying the argument further, the same explanation may suffice for other complications of gonorrhea, including salpingitis

From the evidence submitted, it is assumed that the character of autolysis in the gonococcus renders immunity response of animals and man to injections of the organism unsatisfactory and incomplete In other words, the organic nitrogen of the gonococcus does not seem to be altogether available as antigen This assumption is strengthened by the fact that the nitrogenous portion alone of watery antigen made by me for complement fixation is much poorer in antigenic power than the whole autolysate It was necessary, then, to search for some substance other than protein, or its split products in the autolysate or watery antigen which, with immune serum, would fix complement These substances were found to be the fats of the gonococcus, since these substances, chemically isolated from the organism, and suspended in absolute alcohol, possess a much higher antigenic power than the watery antigens of commerce

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[2] A matter of common observation has been that autolysates were distinctly inhibitory to growth of the gonococcus and should conditions be at all comparable within the body and in artificial culture it may be seen that such antibodies might not be incompatible with the continued existence of gonococci in the tissues.

[3] Zinnser Effects of Heat on Antigen in Precipitins and Agglutinins Infection and Resistance, 1914

The question of whether there may exist with these fats an inseparable and essential nitrogen *"rest"* need not concern us at the present time

I submit a report, preliminary to a forthcoming paper on the subject by L E Schmidt and myself, on complement-fixation tests in which the best of the commercial antigens and my own were used parallel Up to the present, 279 tests have been made and the results show indisputably the importance of the fats in the reaction The serums of 50 normal individuals gave no fixation, nor did the serums of 47 persons with diseases other than gonorrhea

In acute cases under one month, the commercial antigen gave positive tests in 20 per cent, the lipoid antigen in 50 per cent

In subacute cases, up to six months, commercial antigen in 20 per cent, lipoid in 75 per cent

In cases of long standing with repeated or recurring attacks, commercial in 33 per cent, lipoid in 65 per cent

In past cases—over six months to thirty years—of doubtful character, commercial in 16 per cent, lipoid in 50 per cent

In children, all stages included, commercial in 10 per cent, lipoid in 66 per cent

With my lipoid antigen, complement fixation appears at an earlier period, occurs with greater regularity during the disease, and endures longer than with commercial antigen All watery antigens are likely to show periods of alternating positive and negative reactions during an attack of gonorrhea, in which the administration of vaccine takes no[4] part The lipoid antigen shows less fluctuation of this character

The facts shown in this preliminary report appeared to me to place these fatty substances in an important light from an immunologic view,[5] and I have sought to test their antigenic power as a therapeutic agent in the treatment of gonorrhea This was specially desirable because of the unsatisfactory results in the use of autolyzed and whole, unautolyzed, gonococcus vaccine It was found that the fatty moiety is nontoxic for normal man and other animals, even when given intravenously in large doses

The results, briefly summarized, of the treatment of gonorrhea with gonococcus fats are to be regarded as tentative, and constitute a preliminary communication on the subject

The cases treated by me thus far comprise acute, chronic, simple and complicated, in men and infant girls In all, the subcutaneous inoculation of the fats has been followed by marked improvement, and in some by unodubted cure

The chronic cases, in which there are posterior involvement, with slight but constant discharge containing gonococci in smear and culture, have shown disappearance of cocci in discharge, and symptoms, following one to three inoculations The acute cases, taken within the first forty-eight hours of the discharge, showed complete disappearance of gonococci in smears and cultures, and entire absence of the discharge within a week following *one* inoculation Between these extremes are those acute cases showing well-established infection, copious discharge, and considerable edema, which have required more frequent inoculations with increasing doses, and which constitute an improved, but unfinished series, owing to lack of material

There has been a slight local reaction, consisting in reddening and swelling of the subcutaneous tissues, which quickly subsided In some instances a constitutional reaction characterized by chilly sensations, anorexia and some fever appeared in from six to eight hours This reaction has not been constant, but is followed by marked clinical improvement The first indication of improvement is the diminution in the number of cocci in the exudate, which in some cases constituted a striking sign The coincidence of the disappearance of cocci and the constitutional reaction, together with my experience with anaphylactic reactions in animals following the administration of fresh gonococcus autolysates, or following lysis of whole cocci in vivo, has led me tentatively to infer that the reaction in question may be due to the sudden lysis of the cocci in the body of the patient

1310 Hill Street

ABSTRACT OF DISCUSSION

Dr J A. Fulton, *Astoria, Ore* I have done no work in this line I believe, however, that when one in the profession finds that which he thinks is of consequence it is his duty to present it Owing to the low vitality of the gonococci, acute gonorrhea should be easily checked with injections, were it not for the fact that by the time the disease manifests itself the bacteria have buried beneath the epithelium, where they are protected

The urethra will stand a temperature of 120 Fahrenheit without injury I have demonstrated that with a bougie heated to 120 F in the urethra, a thermometer placed alongside of the urethra with the skin folded over it, a temperature of from 104 to 106 was shown, indicating that heat penetrated living tissues and raised the temperature of the skin from 5 to 7 degrees, and showing that even if the bacteria do bury under the epithelium, the heat surely reaches them

Heat must be used carefully and accurately One degree difference in temperature may make for either success or failure, just as one more grain of a drug in solution may determine whether your patient is cured or killed This I wish to impress on every one who attempts the use of heat for the cure of disease The method followed in making applications of heat to the urethra is this the bougie is so constructed as to allow the circulation of water from one end to the other At the entrance and exit of this circulating water is placed an ordinary pair of irrigating thermometers so arranged as to show the temperature of water as it enters the bougie and also at the point of exit, so one may know always the exact temperature of the bougie within the urethra The water is heated in any convenient way, but is kept at such a temperature all the time, so as to show 120 F at point of entrance The urethra is washed out with warm boric solution, and with the patient in a recumbent position the bougie is introduced down to the cut off muscle, and the heat is turned on. The application should last for at least thirty minutes. The temperature of the bougie should not be allowed to vary. It should always show 120 or within a fraction of that point. After this application, the mucosa where touched by the bougie is slightly swollen, and there is some discomfort on urination. The discharge changes to a watery mucoserous character and disappears in from ten to fourteen days as a rule.

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[4] Irons and Nicoll Jour Infect Dis, March, 1915

[5] Meyer, Kurt Antigenic Nature of Lipoids, Ztschr f Immunitäts forsch u exper Therap, xix, 20

My experience convinces me that almost every case of acute gonorrhea, that is, cases in which the disease has not gone into the deep urethra, may be aborted, and many cases of chronic disease cured, through the proper application of heat.

Dr. Frank Hinman, San Francisco: The paper would seem to have two practical lines of application: in the first place in treatment and in the second place in diagnosis. The subject of immunization is a very complex one. There are two principal forms, active and passive immunization. In passive immunization the specific serum that has been produced by active immunization of animals is injected and exerts directly its antitoxic powers. Such passive immunization is possible for those organisms only which secrete a soluble toxin, such as diphtheria, tetanus, etc. Passive immunization cannot be produced with gonococci, for the reason that the gonococcus secretes no toxin but produces injury, possibly after death or autolysis. The immunity of diphtheria is an antitoxic immunity, whereas immunity in the same sense is never established against the gonococcus, but is bactericidal through the interaction of immune substances and complement. Active immunization of the bactericidal form has been shown to be of practical value particularly for typhoid prophylaxis and more recently by using Gay's sensitized vaccine for acute typhoid, for furunculosis, etc. The failure of gonococcus vaccine as an active immunizer and of the gonococcus antigen as a deviator of complement as usually used, has been beautifully explained in this paper of Dr. Warden. The action of the gonococcus is evidently twofold, by injury from substances of autolysis, and by injury from the true gonococcal amboceptor. The fatty and lipoid extracts according to Dr. Warden are nontoxic, but antigens and vaccines made of these lipoids and fats are much more active than the autolysates. These lipoid substances may have the same side-chain grouping as the true gonococcal amboceptor, since they are so much more active than the autolysates, and would be, in a way, analogous to the toxoids in diphtheria immunity. Now, if by the use of these lipoids we can get the gonococcus in a nontoxic but specific form, we will then be in a position more correctly to diagnose gonorrhea and to use vaccines satisfactorily in the treatment of acute gonorrhea and gonorrheal complications.

Dr. John Campbell Spencer, San Francisco: Dr. Warden's contribution practically relegates to the scrap heap all products of the views regarding vaccines and watery suspensions with which the market is drugged at the present time. It is an eloquent treatise on the relative inefficiency of our therapeutic attempts at the present time to treat gonorrheal infection by vaccines. Personally I am glad that I have been present to listen to Dr. Warden's elucidation of this subject because it looks as though we were entering on a new epoch in our treatment of gonorrheal infection. It will be of great benefit in the elimination of this scourge of the human race.

Dr. Louis E. Schmidt, Chicago: I have been fortunate enough to be with Dr. Warden in his laboratory work and to supply much of his clinical material. The purely scientific part of the article I do not wish to discuss, but it seems to me to be the most thorough explanatory article on this subject. It seems to set forth very clearly, at least to me, the reason why we have had so many failures in clinical treatment of patients, and the failures of the gonorrheal complement tests are accounted for. We know that there are any number of instances in which the test has not given us a satisfactory answer. It has always been rather surprising that where we have been able to find gonococcus in culture and in smears, the test has frequently been negative. This holds true in connection with the work in children. The explanation given here clears up the question perfectly to me and gives us a basis for an answer regarding our failures.

Regarding the ordinary vaccine treatment of gonorrhea and its complications, it has practically been relegated to the background. It has been attended with few satisfactory results. Dr. Warden in this paper states that with the old vaccines there have been a limited number of cases in which the results are satisfactory. Certainly the vaccine treatment of gonorrhea, and its complications, is not as satisfactory as the vaccine treatment in certain other conditions. The explanations he has given certainly help to clear up the subject. The vaccines that are on the market at the present time do not adhere to any theories that Dr. Warden has laid down. How do they act? Certain results are gained by giving certain remedies without any known reason therefor. The answer always is, of course, that the results are satisfactory. It is far more satisfactory to all of us to follow the reasons why we get unsatisfactory as well as satisfactory clinical results.

The antigen of Warden is unquestionably far superior and gives more accurate results than the watery antigens on the market. As to treatment, the number of cases up to the present time is limited. However, they go into hundreds, and comparing the results with all other similar methods of treatment I can personally state that in this series of cases which I have had under my observation they are markedly different and more satisfactory.

Dr. Lewis Wine Bremerman, Chicago: If Dr. Warden has all that he claims, we have made a definite advance in the therapeutics of gonorrheal infection. We all have used commercial vaccines and discarded them, using the antigens which were manufactured, and discarding them because we did not get the proper results. Gonorrheal complications and the sequelae constitute the majority of cases of the genito-urinary specialist. If we can advance along the line of treatment we are doing something that will be for the benefit of a large number of people, as well as to the medical profession. I hope and trust that he has an antigen that will give all of the good results he claims for it, because I have worked along this line myself in my own laboratory with commercial antigens with very unsatisfactory results. I cannot see why the complement fixation tests for gonorrhea cannot be made as satisfactory as the complement fixation test for syphilis. If we can prove up the complement fixation equally with syphilis we are advancing an excellent method of diagnosis.

Dr. Fred R. Charlton, Indianapolis: I am glad to add my word of gratitude to Dr. Warden for what he has done. I have been one of the discouraged ones, having used the various products seriatim, as they have been offered, without any clearly defined good results whatever. If the treatment that Dr. Warden outlines here proves satisfactory I am going to feel a little more sanguine as to the general procedure. Such work as his again shows the folly of plunging the profession into "fads" before they are studied. Vaccinotherapy has been nothing less than a craze heretofore. Perhaps some benefit may yet be derived from a Neisser bacterin. To date I have seen none.

Dr. Granville MacGowan, Los Angeles: There is no disease civilized man suffers from that causes half the misery that gonorrhea does. Anything that serves to make it more rare, or make it more readily curable, and to relieve the troubles which come from it is a boon to mankind.

The thing that impressed me most in this admirable paper was the significance of the keeping alive of the gonococci by fats and greases. I think that the usual advice to men is to anoint themselves well with fats before coming in sexual contact with their female companions, and then to wash themselves thoroughly afterwards. One can very readily see how if a free use of fat is made by the male or female, and it is not thoroughly removed immediately after the sexual congress that if one or the other of the participants has gonorrhea the other is pretty sure to have this disease within a few days after the congress The second point brought out shows why we have all failed so markedly to cure or relieve gonorrhea with vaccines

Dr Carl C Warden, Ann Arbor, Mich There are two points that I think need emphasizing One is in regard to the presence or absence of protein or nitrogen in these lipoids We cannot absolutely say that nitrogen is wholly excluded from this product, no matter how perfect our chemicals may be I may say that this nitrogen, if it exists, is one of the essential parts, coupled with the fats

In regard to the complement fixation, it seems very strange that we do not obtain a complement fixation test at all times during the course of gonorrhea The question arises why do we not, especially in the florid stages of gonorrhea, obtain a higher percentage of complement fixation test than we do We shall always be embarrassed by this fact I think the reason for it is fairly evident Man is almost wholly immune to gonococcus to begin with There are very few tissues left in the body on which the gonococcus is able to exist. The blood stream occasionally shows gonococcus infection but these cases are extremely rare Now, then, those positions in the body that are subject to gonococcus infection happen to be extremely remote from the great laboratory of antibody formation, and for this reason it is a long time before the fluids of the body are enabled to form antibodies against the coccus It is only when the disease is beginning to get pretty well along, in from the fourth to the eighth week, that complement fixation appears as a really established thing The greater the amount of antigen the coccus gives to the body as a whole, in the great laboratory of antibody production, the sooner we will find complement fixation positive When the deeper structures of the urethra become involved and the complications of gonorrhea appear, and when the general conditions become manifest, then is the time we have the largest per cent of complement fixation These conditions, I think, we shall always have to contend against, and we shall never be able to find antigen which will fix the complement under all conditions The old watery antigens act variously, according to their fatty contents A new arrangement of the fats and new lipoids will fix complement in the largest percentage of cases There is abundant work to be done on the subject

Dr Fred R Charlton, Indianapolis May I ask Dr Warden whether in his therapeutic experiments he has confined himself to autogenous or the heterogeneous?

Dr. Carl C Warden All strains of gonococcus I have used every one that could be obtained in the ordinary course of the examination of patients I have succeeded in getting together probably forty or fifty different strains The work of Torrey, and a good many others, has shown that if a dozen or more strains are employed, those strains will probably embrace all the variations I feel that by having a large number of strains I have covered all the different varieties that might occur I do not attach any particular significance to autogenous vaccines I think better results are obtained from using many strains than one

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Experimental Vivisection and the Rights of Animals—I cannot argue with the man who insists that his dog and his hog are as good as he is, that he has no right to restrain the one or to eat the other If he refuses to eat meat, or eggs, drink milk, use leather, wool or other animal products for clothing or shelter, if he refuse to make counter attacks against the lions or serpents which attack him, he is consistent, I cannot argue with him, I can merely watch him go his way in the procession with the trilobite, the ichthyosaurus and the dodo But intensely practical questions arise and must be met And the life of a relatively few animals is placed against the life and health and comfort of the human race The antivivisectionist insists that even if you grant that the injury to the guinea-pig or the rabbit or the horse will save the life of a child, you have no right to save it in that way If there is not room in the life-boat for the woman and the dog you have no right to push out the dog to make room for the woman—Samuel S Maxwell, *Science*

PERFORATION OF THE BILIARY TRACT

REPORT OF TWO CASES

HOWARD L BEYE, MD
IOWA CITY, IOWA

Perforation of the biliary tract is so infrequent as to warrant the reporting of unusual cases In the following two cases of perforation of the gallbladder, the patients were operated on by Dr C J Rowan in the surgical clinic of the University of Iowa

Case 1—*History*—L E, schoolboy, aged 11 years, referred by Dr Sinning of Iowa City, on the afternoon of Sept. 7, 1914, while playing, received a blow in the abdomen from one of his playmates This caused him to faint, and after gaining consciousness he was in so much pain that he screamed and had to be carried home During the following night he complained of a great deal of pain, and was very restless The next morning he vomited profusely, and the pain became worse on the left side, and was more marked here than on the right The temperature ranged between 100 and 101 on this day The bowels refused to move even with enemas and after calomel There had been no chill.

The past history was negative, except that about two months before, the boy had received a blow in the abdomen, at which time he was sick for three days with a high fever and vomiting The bowels were moved with difficulty Following this he was apparently perfectly well until the present trouble

Examination—The patient was brought to the University Hospital at 8 30 p m, September 8 At this time the temperature was 100.8, pulse 100, and respirations 40 His face had a drawn, anxious look, and the respirations were rapid and shallow He preferred to be on his side with the thighs and knees flexed, and complained of pain in the abdomen when moved The walls of the abdomen were rigid, this was perhaps most marked in the right upper quadrant, though the patient complained mostly of pain in the left side There was dulness in the right upper quadrant No palpable masses No cough Heart and lungs negative Leukocyte count 21,300 A diagnosis of ruptured appendix and general peritonitis was made

Operation—Under ether anesthesia, a midline incision was made below the umbilicus There was properitoneal edema The abdomen contained a large amount of bile-stained fluid, and considerable fibrin in plaques The proximal half of the small intestines was distended, and the distal half collapsed The intestines were examined for perforation, and none found The incision was carried up to the right of the umbilicus to the gallbladder region The gallbladder was found to be thickened and adherent to the liver, and contained a single perforation in the fundus from which pure bile was pouring No stones were found A rubber tube drain was led down to the perforation, together with a cigaret drain and a strip of iodoform gauze A rubber tube drain was led from the pelvis at the lower end of the incision The usual closure was made

Course—The patient was placed in Fowler's position and given normal salt solution by rectum, and nothing per mouth Recovery was uneventful The patient left the hospital on the fifteenth day

The interesting point about this case aside from the perforation is the chronic cholecystitis present in a child of 11 years The relationship between the condition of the gallbladder and the injury received two months before the perforation is problematic At that time the patient might have had an acute cholecystitis which was followed by gallbladder changes which predisposed to later perforation, or he might at that time have had a perforation of the gallbladder with a localized peritonitis which resolved There is no his tory of typhoid fever, and there were no attacks of tonsillitis to account for the gallbladder infection

Case 2—*History*—Mrs M M, housewife, aged 57, referred by Dr A R Lynn of Marshalltown, for several years had occasional attacks of belching of gas, sometimes with vomiting independent of meals In February, 1913, she suddenly had a severe tearing pain under the right costal margin, radiating to the pit of the stomach Following this she vomited profusely for several hours The pain lasted an hour or more caused her to cry out in agony, and was finally relieved by a hypodermic. Four weeks following this attack she became jaundiced, and this condition persisted until the next fall In July 1913, she had a similar attack.

Ever since the first attack the right side has been tender, and a swelling gradually formed pointing in the right flank above the iliac crest. This finally approached the surface, the skin overlying became reddened and it was lanced An odorless fluid was obtained at first thin and yellow, and later thicker This gave her immediate relief from her constant ache and pain There has been a persistent discharge of a mucous secretion ever since, and recently she passed four wheat-sized calculi The general condition was good except for an increasing gnawing burning sensation in the epigastrium not referable to food taking

Examination—This was negative except for the abdomen In the right side between McBurney's point and the gallbladder region there was a palpable mass about the size of a small orange quite tender Leading down to this mass was a sinus from which a small amount of light yellow tenacious fluid was discharged.

Blood Hemoglobin 78 per cent (Sahli), leukocytes 9 300

Gastric Analysis Seventy-five c c in forty-five minutes. Total acidity 100 Free hydrochloric, 68 No blood

Urine Negative.

A diagnosis of mucous gallbladder fistula following perforation was made

Operation—Sept 28, 1914 under ether anesthesia, a right rectus incision was made above the level of the umbilicus The gallbladder was long and narrow, and was adherent slightly to the omentum, and at the fundus to the abdominal wall at the inner end of the fistulous tract. A large mulberry stone was impacted in the cystic duct. The gallbladder was excised from its connection to the abdominal wall, and cholecystectomy performed. Tube draining was carried to the stump of the cystic duct, and an iodoform gauze drain through the sinus

Course—This was uneventful except for the formation of a Hematoma in the operative wound, and the passage of a small calculus from the old fistulous tract, following which the latter healed The patient left the hospital Nov 3, 1914

One of the interesting points about this case was the very slight amount of adhesions around the gallbladder, considering the extent of the diseased condition which must have been present during the period preceding the discharge of the abscess through the abdominal wall

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Measles—The essential points in regulations for the control of measles are The case shall be recognized and isolated at the earliest possible moment, the premises on which the case is isolated shall be placarded, the patient shall be isolated for at least five days after the appearance of the exanthem, adults and children who have previously had the disease need not be restricted, but it is advisable to warn them as to the slight possibility of second attacks, and keep them under observation, children who have not previously had measles and who are in contact with cases, need not be restricted for seven days after contact but should thereafter be isolated for at least ten days and carefully observed Disinfection after measles is useless and unnecessary Transmission of measles by third persons or fomites must be exceedingly rare, if it occurs at all—Harold Farnsworth Gray, *Jour Infect Dis*, November, 1915

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES"

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL

W A PUCKNER, SECRETARY

STAPHYLOCOCCUS VACCINE (See N N R, 1915, p 319)—Swan-Myers Company, Indianapolis

Swan s Staphylococcus Bacterin (No 37)—Marketed in packages of six 1 Cc vials each containing 300 million Staphylococcus pyogenes albus also in 20 Cc vials containing 300 million Staphylococcus pyogenes albus per Cc

STREPTOCOCCUS VACCINE (See N N R., 1915, p 322) —Swan-Myers Company, Indianapolis

Swan s Streptococcus Bacterin (No 45)—Marketed in packages of six 1 Cc vials each containing 120 million Streptococcus pyogenes also in 20 Cc vials containing 120 million Streptococcus pyogenes per Cc

CALCIUM PEROXIDE (See N N R., 1915, p 230) —The following non-proprietary preparation has been accepted

Calcium Peroxide Merck—Manufactured by E Merck, Darmstadt Germany (Merck and Co New York)

SODIUM PEROXIDE (See N N R, 1915, p 232) —The following non-proprietary preparation has been accepted

Sodium Peroxide Merck—Manufactured by E Merck, Darmstadt Germany (Merck and Co New York)

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OSMIUM TETROXIDE (See N N R., 1915, p 225) —The following non-proprietary preparation has been accepted

Osmic Acid Merck—Manufactured by E Merck Darmstadt, Germany (Merck and Co New York)

SODIUM OLEATE (See N N R, 1915, p 348) —The following non-proprietary preparation has been accepted

Sodium Oleate Merck—Manufactured by E Merck Darmstadt Germany (Merck and Co New York)

THIOSINAMINE (See N N R, 1915 p 361) —The following non-proprietary preparation has been accepted

Thiosinamine Merck—Manufactured by E Merck, Darmstadt Germany (Merck and Co New York)

UREA (See N N R, 1915, p 365) —The following non-proprietary preparation has been accepted

Urea Merck—Manufactured by E Merck Darmstadt, Germany (Merck and Co New York)

SODIUM CACODYLATE (See N N R, 1915, p 49) —The following dosage forms have been accepted

Ampuls Sodium Cacodylate Mulford 7¾ grains—Each ampule contains sodium cacodylate 0 5 Gm (7¾ grains) Prepared by H K Mulford Co Philadelphia.

Ampuls Sodium Cacodylate Mulford 15 grains—Each ampule contains sodium cacodylate 1 Gm. (15 grains) Prepared by H K Mulford Co Philadelphia.

SOLUTION PITUITARY EXTRACT (See N N R., 1915, p 223) —The following dosage form has been accepted

Ampuls Solution Pituitary Extract Mulford 0 5 Cc—Each ampule contains solution pituitary extract 0 5 Cc. Prepared by H K Mulford Co Philadelphia

Therapeutics

TETANUS

The war has shown two very important facts concerning this infection 1 The germ is more or less universal in the regions of warfare 2 The results of its infection may be made negligible by the preventive use of tetanus antitoxin A brief review of this disease may be of interest

Hill[1] found that tetanus is more frequent in the tropics than in temperate climates, and that in the latter climates 86 per cent of all cases are traumatic in origin

The incubation period of acute tetanus is from one to ten days, and of subacute tetanus from ten to twenty days Fifty per cent of all cases develop between the sixth and ninth day, the majority apparently on the seventh day after infection Acute tetanus lasts from one to ten days, and subacute tetanus from ten to twenty days Not until the patient has lived until the tenth day of the disease is there an equal chance for life After the tenth day the patient's chances of recovery increase day by day

There is probably always more or less leukocytosis in tetanus, and Hill found the average count to be 13,000 The eosinophils seem to be diminished in number

The tetanus bacillus is a cylindric rod, larger at one end than the other, and is an anaerobic germ It is constantly present in the dirt of cities and on most country roads, as well as in barns and pastures Noble[2] has recently shown that this bacillus occurs in the intestines of otherwise normal animals, and he found the germ in the feces of eleven of sixty-one horses examined Further examination of these infected animals showed that the germ could disappear in a few weeks, but could also remain present as long as four months Such animals become tetanus carriers,[3] and are a constant menace to other animals which may receive injuries, and to their drivers and hostlers, who may have slight wounds on their hands These tetanus-carrying horses infect the dirt of the fields or streets on which they work or travel

The reason for the perpetual danger from the tetanus organism is that it will live, when not subjected to intense light or heat, for years The germ has also been found in the feces of cows, and has even been found in the feces of man[4] Animals obtain the bacillus from their food, probably principally from infected grass and hay When it is found in the feces of the human being, he has probably obtained it from eating contaminated uncooked vegetables

This bacillus gains entrance to the system almost always through a wound or abrasion, and, as has long been recognized, the most frequently infected wounds are contusions and crushing or lacerating wounds, especially those that occur from sliding, grinding and friction injuries in the streets and from lacerating wounds acquired in warfare, explosions, Fourth of July injuries, etc At first the infection is a local one, and it is stated that the bacilli do not often wander from the point of infection, but they soon produce their toxins, which cause the general disturbance

As this germ grows without air, it is evident, as urged by Muhsam,[5] that infection with other bacteria, pus germs, etc, which will use up the oxygen in the tissues, or in a more or less closed wound, will thus aid in the growth of the anaerobic tetanus bacillus Also, the destroyed tissues at the base or around the wound should be very carefully removed, as such structures, with their impaired circulation, instead of normally combating infection, promote it Muhsam also urges flushing suspected wounds with oxygen, perhaps well furnished by hydrogen peroxid solutions, as oxygen inhibits or stops the growth of the tetanus bacillus

The toxins of tetanus bacilli ascend the motor nerve sheaths and thus reach the spinal cord They unite with nervous tissue and seem to remain in a more or less fixed combination, hence the difficulty of the tetanus antitoxin combating the toxin that has become thus combined Prevention of tetanus by the use of antitoxin is easy, the cure of tetanus with antitoxin is difficult It is probably only late in the disease that the toxins circulate in the blood Sinigaglia[6] found the tetanus bacillus in the blood in a case of slow infection

The beginning symptoms of poisoning from this germ are aches and pains in the muscles, with a general lassitude, some headache, and soon some stiffness of the muscles of the back of the neck, face and jaw The wound or source of infection may show no change, in fact, may apparently be healed The more or less permanent contraction of some muscles and the convulsions of tetanus are too well understood to need description Spasm of the sphincters may make urination and defecation almost impossible The mind generally remains clear, unless there is very high temperature, which is one of the causes of death Death may occur during a convulsion from spasm of the diaphragm or spasm of the laryngeal muscles, or it may occur from exhaustion

It was for many years thought that tetanus antitoxin was of no great value when the disease was positively in evidence It was considered and taught that it was too late to expect any antitoxin activity Therefore, it is very encouraging, in the treatment of this disease, to note that Irons[7] has found in animal experimentation that antitetanic serum will save life when tetanus has already developed, and therefore should perhaps not infrequently save life in the human being If the patient cannot be treated before serious intoxication of the central nervous system has occurred, the toxins, Irons believes, may be neutralized by a large intravenous injection combined with an intraspinal injection of the antitoxin

Nicoll[8] has determined by animal experimentation in the Research Laboratory of the Department of Health of New York, in conjunction with Dr William H Park, and also by clinical experience, that from 3,000 to 5,000 units of antitoxin should be injected into the lumbar region of the spinal canal as soon as tetanus is diagnosed This injection should be done under an anesthetic, to inhibit any possible convulsion during the injection The volume of the fluid injected should be "brought up to 10 to 15 c c by the addition of sterile normal saline, the exact amount being regulated according to the age of the patient and the amount of spinal fluid withdrawn " At the same time he advises the injection of 10,000 units of antitoxin intravenously The spinal injection dose should be repeated in twenty-four hours, and a subcutaneous injection of 10 000 units should be given three or four days later Nicoll finds that the death rate has been reduced by this method of treatment of those who already show symptoms of tetanus

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[1] Hill, E. W Tetanu Arch Int Med, December, 1911, p 747
[2] Noble Jour Infect Dis, 1915, xvi 132
[3] Tetanus Carriers, editorial, The Journal A. M A., May 29, 1915, p 1850
[4] Pizzini Riv d' ig e. san pubb 1898 x 170
[5] Mühsam Berl klin Wchnschr 1914 li No 45
[6] Sinigaglia Riforma med, April 24, 1915
[7] Irons E E Tetanus and Antitetanic Serum The Journal A. M A, May 8, 1915, p 1552
[8] Nicoll Matthias Intraspinal Administration of Antitoxin in Tetanus The Journal A. M A June 12 1915 p 1982

These investigations, with the added clinical experience, would seem to make it doubtful if subcutaneous injection alone of antitetanic serum could cure tetanus, although Comby[9] states that he has cured three cases of tetanus in children by the subcutaneous injection of antitetanic serum

Subsequent injections of antitoxin, especially when given intravenously, can cause anaphylaxis, sometimes severe, and Simon[10] thinks that injections later than the tenth day become dangerous from the standpoint of being likely to produce anaphylactic shock

It has recently been shown[11] that if the tetanus antitoxin is injected into the tissues surrounding the wound soon after the injury, tetanus will be prevented, even if the tetanus bacillus is later recovered from the wound Teutschlaender[11] states that if, in such cases, a little stiffness or tendency to stiffening of the muscles of the part injured begins, he immediately gives another dose of antitoxin

The prophylactic dose of tetanus antitoxin should be about 1,500 units, given subcutaneously, preferably in or about the region of the injury, and this should be given whenever the character of the injury or the region in which the injury is received presents any possibility of tetanus infection This dose can be repeated in a few days if deemed advisable The serum may also be perfused into the open wound, but the antitoxin powder applied to the wound can probably not be relied on as an effective prophylactic An antitoxin impregnated pad is described by Robertson [12]

As in administering diphtheria antitoxin, it should be ascertained if the patient is susceptible to emanations from horses or stables, if he shows hay fever and asthma symptoms from such emanations, it is unwise to administer horse serum, especially as a prophylactic for something that may not occur

The newest of the drug treatments of tetanus is that by magnesium sulphate Solutions of this salt are injected into the spinal canal, and Eunike[13] injects 10 c c. of a 10 per cent solution This drug more or less successfully inhibits the convulsions If active symptoms recur in two or three days, he gives another dose of 8 c c of the 10 per cent solution Certainly the intraspinal injections of magnesium sulphate should be given only in very severe cases The dosage suggested by Eunike is not large, very much stronger solutions have been injected The danger lies in causing paralysis of the respiration Usener[14] states that subcutaneous injections of magnesium sulphate solutions are of value in relieving spasms and convulsions Cloetta[15] says that the action of magnesium sulphate is similar to the action of curare, perhaps not quite so dangerous, as its action may be inhibited by calcium Schütz has shown that magnesium sulphate diminishes heat production, and he thinks that the intensity of its action may be determined by the temperature curve [16]

Injections of magnesium sulphate into the system, and especially into the spinal canal, are always more or less dangerous, and it would seem that in serious convulsive conditions, while waiting for the antitoxin to have its effect, inhalations of chloroform would be safer in quieting and controlling the patient than injections of a substance whose activity passes beyond the control of the physician

Angerer[17] revives the chloral treatment of tetanus in conjunction with the antitetanic serum He gives as high as 5 grams of chloral by rectum twice a day, and adds to this one-sixth grain of morphin hypodermically By this means he gets a sort of "twilight sleep" He continues the antitetanic serum treatment, both intraspinally and subcutaneously, until the active symptoms of tetanus cease

While the dose of the chloral given by Angerer is very large, some such combination of morphin and chloral, with the dose gradually increased or diminished, depending on the symptoms, seems much safer than the magnesium sulphate treatment

Jacobsthal and Tamm[18] bathe all lacerated wounds with the ultraviolet rays, as they claim they will kill the tetanus bacilli as well as other bacteria Riehl[19] believes that he prevents tetanus infection of wounds by applying chlorinated lime in the form of a mixture of 1 part of the chlorinated lime to 9 parts of kaolin This powder is blown into and over all wounds This treatment, he reports, does not cause pain, allows the wounds to heal, and seems to prevent tetanus infection

Phenol treatment has been advised many times, and has been termed "Baccelli's treatment" Reynolds[20] reports the successful treatment of tetanus in a boy of 11 by phenol injections

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Scallops as Food—The scallop industry in Massachusetts has recently increased greatly In 1906 the Massachusetts Fish and Game Commission at the instance of the General Court made an investigation and a report on the scallop industry, calling attention particularly to the sophistication of this food by soaking the scallops in water Inasmuch as the courts have decided that the practice of adding water to oysters is a violation of the law the Massachusetts authorities brought the matter of the possible violation of the law in regard to scallops to the attention of the federal authorities A joint investigation was then made, when it was disclosed that in some instances water in amount equal to the amount of scallops was added to the vessels in which the scallops were marketed Standards of purity were then advised by these authorities

Water in scallops may be detected by the fact that soaked scallops usually contain a milky fluid while unsoaked ones have almost no liquid. If a scallop is rubbed on the prism of an Abbe refractometer, and the refraction of the juice taken, unsoaked scallops will give a reading at 25 C. of 1 38 plus on the scale while soaked ones give a reading of from 1 34 to 1 36. Experiments show that soaking lowers the percentage of proteins and solids The normal figures are from 19 to 24 per cent. for solids and from 14 to 16 per cent. for proteins Soaking lowers these figures to from 10 to 16 per cent. for solids and 9 to 11 per cent. for proteins Scallops collected in the markets in Boston showed that about half of them had been soaked—Pub Health Bull Massachusetts

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[9] Comby Brit. Jour Child Dis. 1915 xii 1
[10] Simon Munchen. med Wchnschr Nov 10 1914
[11] Teutschlaender O Deutsch med. Wchnschr May 13 1915
[12] Robertson H E. A New Method for the Prophylactic Application of Tetanus Antitoxin The Journal A M A. Aug 28 1915 p 793
[13] Eunike Munchen. med Wchnschr Nov 10 1914
[14] Usener Munchen med Wchnschr 1914 lxi 2323
[15] Cloetta Cor Bl f schweiz. Aerzte Jan. 16 1915
[16] Schutz München med Wchnschr Jan 26 1915
[17] Angerer Munchen med Wchnschr Nov 10 1914
[18] Jacobsthal and Tamm Munchen. med. Wchnschr 1914 lxi, 2324
[19] Riehl Med Klin, Jan 10 1915
[20] Reynolds Lancet London May 23 1914

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SATURDAY, DECEMBER 11, 1915

THE OUTLOOK FOR BLOOD TRANSFUSION

Blood transfusion is likely to be a far more efficacious therapeutic procedure in the near future than it has been during the few years that have witnessed the introduction of a successful technic for the operation This statement is not intended to imply that successful transfusions have heretofore been rare or that the coming period is necessarily likely to witness an increasing number of applications of the method in practice But the technic has been rendered more satisfactory, easier of general application under difficult circumstances, and safer in its employment This aspect of the matter is exemplified in the introduction of syringe transfusion, a process easily repeated and involving little pain or trauma as compared with the original surgical method The necessary precautions have been studied and explained so that the dangers and complications of transfusion — such as those due to incompatible blood, dilatation of the heart and introduction of air — are readily preventable The fundamental importance of ascertaining the possibility of hemolysis or agglutination of the red blood cells of either donor or patient by the serum of the other is almost universally recognized and taken into account Further than all this is the fact that the indications for transfusion are being better understood so that, to quote recent writers, there is a tendency more and more to use it not as a means of last resort but as an ordinary therapeutic measure

In the case of any novel method of treatment, applicable to clinical medicine, the value of which depends in good part on statistical results and careful observation, a retrospect and a critical review are always of practical interest From a general summary of this sort prepared by Ottenberg and Libman[1] of the Mount Sinai Hospital, New York, we gain a decidedly helpful impression of the status of blood transfusion Their statistics cover nearly 200 cases, and thus derive considerable authority from the force of numbers The cases in which transfusion was apparently life-saving fall under the headings of acute anemia from hemorrhage, hemorrhagic diathesis, whether hereditary or acquired, grave chronic anemias, and poisoning In a goodly number of other cases, transfusion was not an emergency measure, but was performed on patients whose general condition had been seriously impaired by chronic disease In more than forty of these, great improvement followed the transfusion, even when the recovery from the disease itself was not complete Expressed in a statistical way, 45 per cent of the transfusion cases were successful in that the condition of the patient was greatly improved This includes 22 per cent in which the procedure was life-saving In about half of the attempted transfusions, no good was accomplished

These are the bare figures Some details deserve to be quoted for the light which they throw on the value of the method In almost all of the cases of gastric or duodenal ulcer, the hemorrhages stopped after transfusion The danger of increasing the bleeding by raising the blood pressure through transfusion during active hemorrhage must not be overlooked The cases in which it appears actually to be checked are those of repeated or prolonged hemorrhage Blood which can form normal thrombi is supplied Transfusion is also worth trying as a temporizing measure in other forms of prolonged hemorrhage in which there is nutritional disturbance, as in severe dysentery Ottenberg and Libman insist that transfusion should be tried more often than it has been in the emergencies of severe typhoid Here, too, it not only replaces lost blood but also may help to check hemorrhage With the first appearance of blood in the stools of this disease, preparation should be made so that a transfusion can be done, if needed, at very short notice, for in the typhoid state and in very protracted cases, it may be life-saving Transfusion seems well indicated in the conditions arising from ectopic gestation

The occasional usefulness of transfusion in connection with surgical operations, particularly for postoperative hemorrhage, was early considered and is quite generally understood In surgical shock the results are frankly disappointing, so that, despite the hopes once awakened, transfusion cannot be relied on as a remedy In hemorrhagic disease, and particularly hemophilia, the results have been noteworthy Here transfusion may actually be termed a specific therapy for the control of hemorrhage Where serum treatment — subcutaneous, intravenous or local use of human, horse or rabbit serum — has been without remedial effect, transfusion has repeatedly supplied a lacking element and stopped hemorrhage Ottenberg and Libman are so impressed with its value in hemophilia, in which the majority of the sufferers never reach adult life, that they look on transfusion as offering a new hope to those afflicted with this disease of high mortality They suggest that every individual known to have hemophilia ought to have at his com-mind several persons whose blood by previous tests is known to be compatible with that of the patient and who are willing, when called on, to act as donors. The syringe method does not injure the veins, and allows for any number of prompt transfusions. In consideration of this, the New York investigators believe that the majority of hemophiliacs might be enabled to lead a life of normal duration.

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[1] Ottenberg, R, and Libman, E Blood Transfusion Indications, Results, General Management, Am Jour Med Sc., 1915, cl, 36

With regard to pernicious anemia, no one can be expected in the present state of knowledge to speak with emphatic certainty of any satisfactory management of this insidious disease. Ottenberg and Libman believe that transfusions should be resorted to early, and persistently repeated, to prevent the development of a marked grade of anemia. They regard transfusion as the best remedy; it never cures, but it leads to remissions in about half of the cases. When these fail, splenectomy can still be resorted to in accord with the dictates of increasing experiences. In the infectious diseases there are numerous possible fields of application for transfusion which deserve very careful study and are likely to reward it. Even in such a serious condition as endocardial infection, transfusion offers some promise. It puts the organs into better condition to respond to other methods of therapy, and inasmuch as there is a tendency in endocarditis for the patients to become spontaneously bacteria-free, the procedure may be worth trying repeatedly.

RESPONSES OF THE RESPIRATORY CENTER

It has long been known that carbon dioxid "stimulates" the respiratory center, that is, causes an increase in the rate or depth, or both, of the respiratory movements. The result is an increase in the amount of air breathed in a given time. Researches of recent years have shown that this action of carbon dioxid is in reality due to the hydrogen ions of the carbonic acid (H_2CO_3) formed when carbon dioxid is dissolved in water or in a fluid like the blood. Other acids reaching the blood have the same effect.

Loewy showed, twenty-five years ago, that within certain limits there is a parallelism between the percentage of carbon dioxid in the inspired air and the volume of air breathed. Thus the total amount of air breathed doubled when the subject inhaled air containing sufficient carbon dioxid to raise the concentration of carbon dioxid in the expired air to between 5 and 6 per cent. Loewy and others have taken advantage of this reaction to test the effects of drugs on the excitability of the respiratory center. As an illustration of the results obtained, the effect of morphin may be cited. After a small dose of morphin, a much greater concentration of carbon dioxid in the inspired air is required to cause a given increase in the amount of air breathed; in other words, the excitability of the respiratory center has been lowered by the drug. Since the excitability of the respiratory center to other stimuli (through sensory nerves, for example) is similarly lowered by morphin, the mode of action of opiates as respiratory sedatives is obvious.

Means, Newburgh and Porter[1] have recently applied the same method to a study of the condition of the respiratory center in experimental pneumonia. They compared the effects of different concentrations of carbon dioxid on the volume of air breathed by normal cats and by cats in which pneumonia had been experimentally produced. In all cases the breathing of carbon dioxid had a much greater stimulating action on the respiratory center of the normal cats than on that of the cats with pneumonia; there was a marked depression of the excitability of the respiratory center in pneumonia, especially marked in those animals which were near death, but also very pronounced in those which were only moderately ill. Aside from their great scientific interest, these results would seem to have important practical bearings. Thus, as was stated above, morphin has the same effect on the respiratory center as does pneumonia; this suggests that great caution should be used in the administration of opiates to patients ill with pneumonia.

Peabody[2] has recently applied this principle (the effect of carbon dioxid on the respiratory center) in an effort to obtain further light on the mechanism of the production of dyspnea in certain cases of cardiac and of cardiorenal disease. He found that, whereas in normal individuals the total ventilation was doubled only when the concentration of the carbon dioxid had risen to between 4.2 and 5.4 per cent., in certain of the pathologic cases the ventilation was doubled when the inspired air contained only 2 or 3 per cent. of carbon dioxid. This result does not, however, show that the excitability of the respiratory center has been directly affected in these pathologic conditions, for these results were obtained only in those cases in which a condition of acidosis was present; cases without acidosis or cases in which the acidosis had been combated by the administration of alkali reacted to an increase in the carbon dioxid content of the inspired air in a normal manner. This is another illustration of the fact that in certain cases of cardiac, and especially of cardiorenal disease, the dyspnea is due in part to an accompanying condition of acidosis.

Observations of this character are of great importance in explaining the condition and responses, under normal and pathologic conditions, of one of the most vital but in many respects least understood of the functions of the body, that of respiration.

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[1] Means, J. H.; Newburgh, L. H., and Porter, W. T.: State of the Respiratory Mechanism in Pneumonia, Boston Med. and Surg. Jour., 1915, clxxiii, 742.

[2] Peabody, F. W.: Clinical Studies on the Respiration, 1. The Effect of Carbon Dioxid in the Inspired Air on Patients with Cardiac Disease, Arch. Int. Med., November, 1915, p. 846.

THE ABSORPTION OF CHOLESTEROL

The peculiar lipoidal compound cholesterol, or cholesterin, as it is still sometimes called, has long been known to physiologic chemists, yet, aside from those features of its chemical structure which mark it as an alcohol, and certain other incidental characteristics, the real make-up of this complex substance is almost as much of a puzzle as it was two or three decades ago Cholesterol has not been synthetized by the chemist, but its widespread occurrence in nature among animals and, in closely related form at least, among plants certainly foretells the biologic importance of the substance

In the animal organism, cholesterol occurs not only free, but also combined with fatty acids in the form of esters Cholesteryl oleate and palmitate are known as constituents of the blood along with the alcohol itself In the nervous system a large content of free cholesterol is always present Pathologic structures may also contain it Until quite recently it has been debated whether cholesterol can be formed anew in the adult organism or whether the latter is dependent on exogenous sources for its supply Today there is, we believe, a fair agreement that the cholesterol of the body has its origin in the food and not in actual synthesis within the tissues English investigators, in particular, have shown definitely that feeding cholesterol either as such or in the form of its esters results in an increase in the blood content of both forms

The extension of the physiology of cholesterol has long demanded a better elucidation of the mode and path of absorption of the substance, and some indication of the formation of its esters Dr J H Mueller,[1] of the Department of Pathology at Columbia University, College of Physicians and Surgeons, has followed the actual absorption of cholesterol and its derivatives from the alimentary tract into the lymph stream of the thoracic duct Reasoning that, since fatty material enters the blood stream by way of the lymphatics, one might expect to find cholesterol also absorbed in this way, because of its solubility in fats and its insolubility in aqueous mediums, Mueller analyzed the lymph of experimental animals before and after feeding the lipoidal product The figures show that cholesterol is readily absorbed from the intestinal tract through the chyle, and may be recognized in the contents of the thoracic duct When cholesterol is fed entirely in the free condition, a portion is esterified during the absorption, and appears so in the chyle Cholesterol esters, in turn, may be split into their component groups Hence, either in the intestinal contents or in the wall of the intestine, processes of esterification or hydrolytic cleavage may take place As a result, the absorbed product shows approximately the same proportion of free cholesterol to ester as is found normally in the chyle Evidently this ratio tends to be preserved The findings of Mueller do not prove directly that no cholesterol is absorbed immediately into the blood, but the quantitative data make such a process appear as a more unlikely probability

THEORIES OF DELIRIUM TREMENS

Since the Harrison Narcotic Law went into effect, many drug habitues, having exhausted their supply and failing to obtain more, have turned to alcohol as a substitute In some who had been drinking for years, the sudden and marked increase in the amount of liquor consumed has led to the frequent occurrence of delirium tremens This brings up anew the question as to what is the final factor in the production of delirium tremens

Chronic alcoholic poisoning produces well-known changes in the central and peripheral nervous system Among these are vacuolization and high grade degeneration of the nerve cells with atrophy and shriveling, fatty infiltration of the medullary substance, dissolution of the chromatin structure, inflammatory infiltration of the pia, internal hydrocephalus, and degeneration of the peripheral nerves Cases of delirium tremens may present the same changes, or the chronic changes may be of higher grade Even instances of Korsakoff's psychosis may differ from chronic alcoholism only in a more severe change in the ganglion cells As yet, however, no changes have been found in the brain which explain why a man who has been drinking for years suddenly develops a delirium which runs a definite course of from three to five days or even longer

It has been thought that delirium tremens is an acute infection occurring in chronic alcoholics Nevertheless, many cases run their entire course without fever, and Nonne[1] found blood cultures negative in fifteen consecutive cases examined by him Dollken[2] believes that continued drinking of alcohol results in the production of a poisonous substance in the brain itself, and that an accumulation or concentration of this substance produces delirium tremens Jacobson[3] explains the delirium as an autointoxication, the toxin arising from the pneumococcus gaining entrance through the liver, the kidney or the intestinal tract, and acting on a brain which has been poisoned over a long period of time by alcohol The view of Hertz[4] differs from this in that the supposed poison which precipitates the delirium comes from an insufficiency on the part of the kidney, this in turn being due to the acute nephritis which usually accompanies delirium

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[1] Mueller, J H The Dissimilation of Cholesterol and Its Esters Jour Biol Chem, 1915, xxii, 1

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[1] Nonne Bakteriologische Blutuntersuchung bei Delirium Tremens, Allg Ztschr f Psychiat, 1904, lxi, 220

[2] Döllken Die körperlichen Erscheinungen des Delirium Tremens, Leipzig, 1901

[3] Jacobson Ueber die Pathogenese des Delirium Tremens, Allg Ztschr f Psychiat., 1854, xi, 221

[4] Hertz Pathogenese von Delirium Tremens, Neurol Centralbl 1901, xx, 524

tremens That albuminuria is present and seemingly dependent on this delirium was long ago maintained by Fürstner,[5] and has been noted repeatedly since According to Bonhoefter,[6] chronic alteration in the intestinal tract is responsible for the elaboration of poison which is normally excreted through the lungs In diseases of the lungs, and especially in pneumonia, an altered gas exchange occurs, the excretion of this poison is hindered and delirium tremens is the result Wagner von Jauregg[7] believes that the liver rather than the lungs is the organ which fails to eliminate the poison elaborated in the gastro-intestinal tract, and he thinks that this failure is due to the changes occurring in the liver in chronic alcoholism Kauffmann[8] has asserted that this poison is a carbon derivative acting on a medulla altered as a result of chronic alcoholism He believes that the delirium will persist until the production of this carbon derivative stops

All of these theories demand as a preliminary condition a poisoned and permanently altered central nervous system on which a poison acts The objection is raised that many chronic drinkers develop marked brain and visceral changes and yet never suffer a delirium In answer it has been suggested that, in patients who acquire delirium tremens, the brain has undergone some special change As a result of this change, an autointoxication produces a delirium, or one may assume the view of Raimann,[9] that for each poison elaborated in chronic drinkers, a special psychosis results Thus one poison causes delirium tremens, a second Korsakoff's psychosis, and a third the poliomyelitis superior acuta of Wernicke

The possibility that delirium is due to an increase in the pressure and amount of the spinal fluid has recently been considered[10] There are two other theories of special interest, the first on account of its ingenuity, the second on account of its bearing on statistical evidence Jauregg[11] of Vienna assumes that the body of chronic alcoholics protects itself by the production of an antialcohol which is of the nature of an antitoxin When a hard drinker suddenly stops taking alcohol, this antialcoholic substance, having no alcohol to which to affix itself, acts on the body in such a manner as to produce delirium tremens Hare[12] maintains that the development of delirium is due to a sudden fall in the amount of alcohol circulating in the blood of alcoholics His evidence is drawn from a study of seventy-five cases of delirium tremens, in nearly all of which there was a great reduction in the amount of alcohol absorbed prior to the onset of delirium In many of these instances the alcohol was withheld, in others vomiting prevented its absorption

Numerous objections have been raised to each of these theories The views concerning poisons and autointoxications have been vigorously attacked because there is as yet no definite proof that a poison is elaborated There are already adversaries to the recent notions concerning an increased pressure of the spinal fluid and the fall of alcohol in the circulating blood, all of which indicates that much work remains to be done before the final answer to the problem is reached

A NATIONAL BOARD OF MEDICAL EXAMINERS

Preliminary steps have been taken for the organization of a national board of medical examiners, to be established with the government medical services as a nucleus A body composed of fifteen physicians,[1] including representatives of the government services, is now at work on the details by which a working organization can be established The original intention was to have representatives on the board from a number of prominent medical organizations, including the American Medical Association, but at a meeting held recently in Washington it was decided that no organizations of physicians as such should be directly represented on the board We believe that this decision is a wise one, even though it eliminates the American Medical Association from direct representation on the board The matter came before the House of Delegates of the American Medical Association last June, as it was a part of the president's address, the only action taken was to refer the matter to the Council on Medical Education for further consideration It is proposed to make this matter a subject of general discussion at the conference of the Council to be held in Chicago, February 7, next A symposium on the subject is being arranged, and several prominent speakers, including representatives of the government services and state licensing boards, will participate

That there is need of a national board of medical examiners practically all are agreed Such a board must be essentially a voluntary organization — unless created in some way by the national government — the purpose of which must be not to displace but to cooperate with the various state medical licensing boards It is essential that the educational qualifications required of those who are to take the examination should be as high as the highest required by any state board The methods of verifying and evaluating credentials of educational qualifications must be so thorough as to make it impossible for any poorly qualified individual to slip through Its examination must be of such unquestioned thoroughness as to make it worthy of recognition by all state licensing boards If these conditions obtain, and especially if the certificate of this board is accepted for admission to the three government services in lieu of the examinations at present required, all state licensing boards would undoubtedly in time recognize it as an acceptable qualification for the license in their various commonwealths Progress in this respect would be a parallel to what has taken place in Canada, where, following the organization of the Medical Council of Canada, it was necessary to secure recognition of it in each province of the Dominion

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[5] Furstner Ueber Albuminurie bei Alcoholisten Arch f Psychiat 1815 1816 vi 755

[6] Bonhoeffer Klinische und anatomische Beitrage zur Kenntnis der Alkoholdelirien Monatschr f Psychiat. u. Neurol 1895 i 229 Pathologische und anatomische Untersuchungen an Alkoholdeliranten ibid 1899 v 379

[7] Von Jauregg Die Giftwirkung des Alcohols bei einigen nervosen und psychischen Erkrankungen Wien klin Wchnschr 1901 xiv 359

[8] Kauffmann Stoffwechseluntersuchungen bei Alkoholdeliranten Jahrb f Psychol u Neurol 1908 x 22

[9] Raimann Beitrage zur Lehre von den Alkohol Augenmuskellahmungen Jahrb f Psychiat u Neurol. 1890 xx 136

[10] Lumbar Puncture in Delirium Tremens editorial The Journal A M A Oct 30 1915 p 1557

[11] Jauregg quoted by Wassermeyer Arch f Psychiat. 1908 xliv 861

[12] Hare Alcoholism Its Clinical Aspects and Treatment London J and A Churchill 1912

[1] The present members of the national board are Admiral William C Braisted Washington surgeon general United States Navy, president Major General William C Gorgas Washington surgeon general United States Army General Rupert Blue, Washington surgeon general United States Public Health Service Colonel Louis A La Garde Washington United States Army treasurer W C Rucker Washington assistant surgeon general United States Public Health Service Commander E R. Stitt Washington United States Navy Dr Herbert Harlan Baltimore representing the Federation of State Medical Boards Dr Isadore Dyer New Orleans Dr E. Wyllys Andrews Chicago Dr Louis E. Wilson Rochester, Minn. Dr Victor C Vaughan, Ann Arbor Mich. Dr Henry Sewall Denver Dr W L. Rodman, Philadelphia Dr Austin Flint, Jr, New York and Dr Horace D Arnold Boston

Such a board would make for greater uniformity and higher standards not only in educational qualifications but also in the character of the examination for the license to practice medicine in every state

Current Comment

A THEORY OF THE PRODUCTION OF DIURESIS

Some time ago Cow, of the pharmacological laboratory at Cambridge, England, made the interesting and unexpected observation that a strictly physiologic quantity of saline solution or of water, which may fail to produce any increase in diuresis when it is injected directly into the circulation, may nevertheless give rise to a distinct increase when administered by the mouth Usually, intravenous injections of active products are more potent than oral administration Hence the suggestion that there exists in the gastro-intestinal mucous membrane a substance which presumably is taken up by water during absorption from the alimentary tract, and that this substance, either directly or indirectly, is largely concerned in the production of diuresis[1] More recent investigations by the same author[2] have elucidated the probable sequence of events concerned in this phenomenon They show that perfusion of the kidney with extracts of the duodenal mucous membrane gives rise to diuresis provided the fluid has previously been passed through the general circulation or through the circulation of the head and neck Circulation through a headless subject is ineffective We need not here detail the evidence which furnished the explanation It points to the pituitary body, an organ which gives an extract of known diuretic action, as the connecting link between the introduction of the duodenal mucous membrane extract and the subsequent diuresis Ingestion of water or saline solution may thus be assumed to lead to an absorption of some substance contained in the gastro-intestinal mucous membrane which in turn stimulates the pituitary to discharge the product that induces diuresis The suggested succession of events reminds one of the sequence by which gastric chyme is believed to liberate in the intestinal wall the secretin which thereupon provokes the flow of pancreatic juice In the case of diuresis cited there is a duplication of hormone effects Several phenomena are in accord with the hypothesis of Cow The long latent period which occurs between an intravenous injection of duodenal membrane extracts and the onset of increased diuresis is explicable on the basis of the time required for the succession of indirect events including the pituitary functioning It also indicates why in otherwise intact experimental animals whose pituitary bodies have been destroyed, intravenous injections of duodenal mucous membrane extracts produce no characteristic diuretic effects such as follow when the pituitary is intact The suggested interrelation between the mucosa of the intestine and the pituitary is an unexpected discovery which, if it shall be confirmed, adds another to the instances of remarkable "long-distance" chemical regulative mechanisms in the organism

THE SOCIAL TREATMENT OF TUBERCULOSIS

The significant feature of the Home Hospital experiment of the New York Association for Improving the Condition of the Poor[1] is its recognition of the fact that tuberculosis is a social as well as an individual disorder, affecting people's lives at many points, and therefore to be attacked coincidently from several sides The New York City Department of Health, among others, is doing work based on a recognition of this fact Mrs Herman M Biggs, wife of the commissioner of health of New York State, in an address delivered before the New York Association of Tuberculosis Clinics,[2] describes the social activities of the Chelsea Clinic, located in the west side tenement district of New York A class in dietetics gives instructions to mothers and other homemakers on the values of foodstuffs and the preparation of simple, nourishing, inexpensive foods Trained dietitians are sent into the homes of tuberculous families under observation, to teach the members of the family how to market and cook Families are encouraged and, so far as possible, assisted to improve their housing conditions, but this, though most important, is expensive and difficult Physical training classes for the children have been in operation for about two years, and the results of corrective and developmental exercises have been most encouraging A nursery, a kindergarten and a roofgarden, where the children spend most of their time, furnish means of removing them from tuberculous homes during the day The children take

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[1] Cow, D Arch f exper Path u Pharmakol, 1912, lxix, 397, Jour Physiol, 1914, xlviii, 1

[2] Cow, D Diuresis—The Pituitary Factor, Jour Physiol, 1915, xlix, 441

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[1] A Method of Attack on Poverty and Tuberculosis, Current Comment, The Journal A M A., Nov 27, 1915, p 1922

[2] Reported in the Modern Hospital, September, 1915, p 203

long naps, and are given a nourishing supper before their return home Mrs Biggs does not give figures on comparative cost and efficiency, such as were furnished by the Association for Improving the Condition of the Poor with regard to the Home Hospital A comparison would doubtless be difficult to make, but it would be instructive to have some of the concrete results of this interesting work presented for the guidance of tuberculosis workers elsewhere

ANOTHER TRAGEDY OF UNPREPAREDNESS

In a football game at St Louis several weeks ago, one of the players received an injury to the cervical spine and was taken to the City Hospital After careful examination it was determined that surgical interference was not indicated, in that fragments of the vertebra were not then pressing on the cord, that the character of the injury made the patient's condition practically hopeless, and that the treatment indicated was absolute quiet and immobilization The parents of the boy were frankly told the seriousness of the injury In the face of these conditions, according to the *Journal of the Missouri State Medical Association*,[1] an osteopath, who had been engaged by the father, wanted to treat the patient immediately The surgeon in charge, fearing injudicious handling which would deprive the patient of any existing chance for recovery, refused to permit the osteopath's treatment The osteopath, accompanied by the boy's father, then obtained an order from the mayor to the hospital commissioner, relieving the hospital physicians from further responsibility and permitting the osteopath to "try to save the patient as the doctors had 'given him up'" Says the Missouri journal

> For five days the patient had been resting quietly with a gradual lessening of the effects of the frightful shock from the hemorrhage into the cord Then the osteopath applied a jury-mast to the victim's head which resulted in renewed shock, a scream and a plea from the patient to remove the apparatus The patient became cyanotic. The extension was removed on account of the patient's bad condition Death followed about two hours later

The necropsy report showed that death was due to "hemorrhage into the cord and fracture of the cervical vertebrae," thus supporting the diagnosis of the physicians and proving that their treatment had been correct The *Journal* continues

> Now it seems clear that the major and the director of public welfare actually took charge of a poor unfortunate who was receiving the best possible care which could be provided in a metropolis and noted medical center They dismissed the skilled attendants who were honest and had informed the relatives of the actual state of affairs and turned the patient over to the distracted and deluded father and mother and an arrogant, boastful osteopath

Here, it seems, is another instance in which the delicate watch was given over for repairs, not to a skilled watchmaker, but to a blacksmith The change of the patient from a condition of quiet restfulness, with its possible chance for recovery, to one of sudden pain, shock and speedy death was too prompt to be interpreted otherwise than as due to the use of methods entirely unwarranted by the conditions The safety of the patient demands that whoever assumes the role of the physician must have had sufficient medical training to know when such treatment is best and when it is bound to do more harm than good

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[1] December 1915 p 544

SECRETORY NERVES FOR THE KIDNEY

The anatomic features of the innervation of the kidney are well understood, and the relation of the nervous system to its blood supply has been fairly well elucidated in recent years Vasomotor impulses which change the circulation in the renal organs promptly affect the condition of diuresis in them From the richness of their nerve supply as well as by analogy with other active glands, one might expect the kidneys to contain true secretory nerves The answer to this question has been difficult to secure, particularly because of the sensitiveness of the kidney structures to even minor variations in the blood supply and arterial pressure, as well as to the presence of small quantities of chemical substances in the blood stream Only when these variables are controlled and accounted for can alterations in urine production be charged to nervous stimulation The remarkable adaptability of the kidney function to changes in the composition of the fluid perfusing it is undoubtedly in large measure a response to chemical factors Nevertheless there have been occasional suggestions of an influence exerted by the nervous system directly on the active cells Some time ago, experiments by Asher and Pearce[1] were cited which these investigators interpreted as demonstrating the presence of renal secretory fibers in the vagus nerve The technical difficulties of the investigation were very great, and the conclusions have not remained unchallenged Asher and Pearce depended on the rate of urine formation for evidence of the changes in the functional activities of the renal cells under vagus stimulation Pearce and Carter,[2] of the physiologic laboratory at the Western Reserve University in Cleveland, have sought for corroboratory evidence of renal activity under vagus stimulation in another manner Cellular metabolism is well known to be attended with increased consumption of oxygen The action of some diuretics, for example, is accompanied by increased gaseous metabolism of the kidney This factor was investigated, therefore, in relation to vagus stimulation Pearce and Carter failed to obtain evidence of any increased gaseous exchange, and their newest evidence accordingly speaks against the supposed existence of renal secretory fibers in the vagus nerve

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[1] Asher L. and Pearce R. G Ztschr f Biol 1913 lxiii 83 Do the Kidneys Have Secretory Nerves? editorial The Journal A. M A. Dec. 6 1913 p 2073

[2] Pearce R. G and Carter E. P The Influence of the Vagus Nerve on the Gaseous Metabolism of the Kidney Am. Jour Physiol 1915 xxxviii 350

Safe Schools—Public schools are a public trust When the parent delivers his child to their care he has a right to insist that the child under the supervision of the school authorities shall be safe from harm and will at least be handed back to him in as good condition as he was at first—*Wisconsin State Board of Health Bulletin*

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities new hospitals, education, public health, etc)

ALABAMA

Personal.—Dr John Little, Tuscaloosa, has been reelected treasurer, and Dr William M Faulk, Tuscaloosa, secretary of the board of trustees of the Alabama Insane Hospital

State Tuberculosis Commission Appointed—The governor has appointed the following as the Alabama Tuberculosis Commission created by the last session of the legislature Dr William H Sanders, Montgomery, ex-officio, and Drs Cabot Lull, Andrew L Stabler and Benjamin L Wyman, Birmingham, R C Long, Carbon Hill, Rev George E Birmingham and Messrs J T Ashcraft, Florence, A R Brindley, Gadsden, and E R Brown, Birmingham

Health Campaign in Etowah County—State Health Officer Sanders has notified Dr Claude L Murphree, Gadsden, health officer of Etowah County, that he intends shortly to inaugurate a campaign for better sanitation and health in the county, and has asked for the names of ten places that will be likely to give audience to such a campaign The county will be properly circularized and experts will urge the adoption of methods of sanitation which will bring about a revolution in health conditions

Hospital Notes—Work will shortly be started on the addition to the Birmingham Infirmary, West End The addition will be in two units, 50 by 100 feet and three stories in height and in them will be housed a maternity ward and a ward for medical treatment——A meeting was held in the court house at Clanton, November 20, to make arrangements for the erection of a hospital building at Clanton, for Chilton County——A mass meeting of citizens of Dothan and Houston counties was held November 8, at the State Hospital at Dothan to raise $40,000 for building and equipping a modern general hospital for the city——The southside jail, Birmingham, has been transformed into a charity hospital under the care of the city physician

ARKANSAS

State Society to Meet in Texarkana—The annual meeting of the Arkansas Medical Society will be held in Texarkana early in May next

Smallpox—An epidemic of smallpox exists at Heber Springs According to Dr Charles W Garrison, state health officer, more than fifty cases have developed in the town

State Antituberculosis Society—At a meeting of the State Society for the Study and Prevention of Tuberculosis in Little Rock, November 24, the local society was absorbed and new officers were elected On the new board of directors appear the names of the following physicians Drs St Cloud Cooper, Fort Smith, and Clinton P Meriwether, Charles R Chestnut, and Charles W Garrison, Little Rock

General Hospital Favored—The closing session of the third annual conference of health officers of Arkansas, November 23, was a joint meeting between the health officers and the faculty members and alumni of the University of Arkansas, at which a resolution favoring the establishment of a state general hospital was unanimously adopted A committee of five physicians was appointed to work out a plan for establishing a hospital and to form organizations in each county to work for the passage of a law making appropriations for its maintenance

Personal—Dr Frank B Young, superintendent of the State Hospital for Nervous Diseases, Little Rock, has resigned to take effect November 31 The board of control accepted his resignation and tendered the position to Dr James L Greene, Hot Springs, whom Dr Young succeeded——In honor of his seventieth birthday Dr M Donaldson, Rector, was given a banquet by local physicians and druggists, November 18——Dr Delparde W Roberts, senior physician of the State Hospital for Nervous Diseases, Little Rock, has resigned to accept a similar position at the Sacred Heart Hospital near Milwaukee

ILLINOIS

Water Survey Chemist Transferred—H P Corson, instructor in sanitary chemistry and bacteriology for the Illinois State Water Survey, has been appointed sanitary chemist in the United States Public Health Service at Grove City, Pa.

New Dispensary Opened—A free dispensary has been opened in connection with St John's House, Ridgely, Springfield The institution will be open on Saturdays from 10 to 12 o'clock, and a physician and nurse will be in regular attendance

Epidemic Diseases—The public schools of Sparland have been closed on account of the presence of smallpox——The schools in DuQuoin have been dismissed and the buildings fumigated on account of the presence of twenty-five cases of diphtheria in the city

Personal—Dr Warren R Rainey, Salem, a member of the Chicago unit, has returned from Flanders——Dr Henry S Metcalf, Mt Carroll, is reported to be seriously ill with septicemia in the Freeport General Hospital——Dr Wilfred H Gardner, Bloomington, who has been serving as surgeon in a British Hospital in London, for almost a year, sailed for the United States December 8——Dr Marion E Reed, East St Louis, has returned after eight years in the Samoan Islands——Dr Clarence M Cheadle, Ashton, is at Nish, Serbia, recovering from typhus fever——Dr Emil Lofgren, Rockford, has been elected president of the Winnebago County Antituberculosis Association——Dr John P Benson has been elected president and Dr Herbert S Worthley, secretary, of the medical staff of St Joseph's Hospital, Joliet——Dr William C Bridge, Elgin, fell on a slippery pavement, November 22, receiving a severe scalp wound

Chicago

Physicians' Club Meets—The Physicians' Club held its second dinner of the year, November 23, when the psychopathic situation was discussed Chief Justice Harry Olson of the municipal court presided

Hospital Addition Approved—Plans for a $1,000,000 addition to the Cook County Hospital which is to contain a model hospital kitchen, have been approved by members of the Board of County Commissioners

New Charities Building Dedicated—The building at Wood and Selden Streets, erected at a cost of $200,000 by Julius Rosenwald, housing the West Side Charities and to be used as a general administration building by the Associated Jewish Charities, was dedicated with formal ceremonies on November 28

Annual Address at Institute of Medicine—At the annual meeting of the Institute of Medicine of Chicago, December 7, Drs Thomas J Watkins, Robert B Preble and Frank Cary were elected members of the board of governors for a term of five years The annual address was delivered by the president, Dr William E Quine, on "Medical Teachers and Teaching," and Professor Stieglitz of the University of Chicago and Professor Kendall of Northwestern University spoke on the "Relation of the Institute to Medical Progress"

Children's Health Crusade—The December issue of the *Open Air Smile,* the organ of the Elizabeth McCormick Open Air School, is devoted to the Children's Health Crusade Day, December 10 The superintendent of schools has requested teachers in all schools to see that this journal is distributed to each child and that it be used at reading lessons and at convocation exercises and as a test for health talks on that day A similar use will be made of this issue of the periodical in the parochial schools of the city

Personal—Dr William A Clark sailed for Belgium, December 4, to be director of an American Red Cross unit at Hospital L'Ocean, La Panne, Belgium——Dr Maurice B Wallin, ambulance surgeon of the West Chicago Avenue Police Station, was injured in a collision between his automobile and a street car, November 30——Dr John Dill Robertson has been appointed chairman of the committee on sanitation of the Chicago Bundle Days Committee—Dr Irving F Stein has been appointed associate in obstetrics on the staff of the Michael Reese Hospital——Dr Otto T Freer delivered an address before the German Medical Society of New York on December 6 His subject was "Opening the Frontal Sinus Through the Nose"

IOWA

Hospital News—Dr George W Franklin has opened a hospital in Jefferson The institution has five rooms and accommodation for seven patients——Dr Joseph J Meehan has purchased the Young property at Denison and will remodel the house for a private hospital or sanatorium

New Antituberculosis Societies—The Sioux City and Woodbury County Society for the Prevention of Tuberculosis was organized November 12 to take over the work that has been performed by the Visiting Nurses' Association——A society for the prevention of tuberculosis was organized at Boone November 23, at which Dr Albert B Deering was elected president

Personal.—Dr W T Graham, superintendent of the Methodist Hospital, Des Moines, has been placed in charge of the hospital of the state university, Iowa City——Dr Guilford H Sumner, Des Moines, secretary of the State Board of Health is reported to be ill in a hospital in Ruthven——Dr J Robert Wright has been appointed assistant superintendent of the State Hospital for Inebriates Knoxville, succeeding Dr J Van Meter, who has accepted a position at the Clarinda State Hospital

Vital Statistics—Iowa, with a population of 2,225 000, in August had 1 534 deaths According to the report of the State Board of Health 184 of these deaths were in children under 1 year, 55 in children from 1 to 5 years, 33 from 5 to 10 years There were 23 deaths of persons 90 years of age or over The number of deaths in state institutions was 30 There were no deaths in the state during the month from malaria smallpox or rabies There were 21 deaths from typhoid fever, 7 from measles 8 from whooping cough, 2 from pellagra 5 from tetanus 169 from cancer and other malignant tumors, 167 from organic diseases of the heart, 106 from nephritis and other diseases of the kidneys, 17 from puerperal septicemia and other puerperal diseases There were twenty-three suicides

KENTUCKY

New Hospitals—The Citizens' National Hospital, a continuation of the hospital of the old Louisville National Medical College was reopened in new quarters at 1525 W Chestnut Street Louisville November 9——At a meeting of the Clark County Medical Society at Winchester November 5, it was announced that $17 500 was now available for the county hospital project The Fiscal Court has made a pledge of $5 000 as soon as $25 000 has been raised The society now asks that this amount be reduced so that the court's donation may become available when $20 000 has been raised——A meeting was held in Mt Sterling November 6, in the interest of a hospital for Montgomery County for which $25 000 is required A committee was appointed to visit Harrodsburg and inspect the new hospital there——The new Harrodsburg Hospital erected at a cost of $13 000 was formally dedicated October 22 Dr Lewis S McMurtry, Louisville, delivered the principal address

LOUISIANA

Health Exhibit Car in Texas—The educational hygiene exhibit car of the Louisiana State Board of Health was on exhibit in Dallas during the meeting of the Southern Medical Association

Quarantine Not to be Moved—Surgeon-General Rupert Blue U S P H S after an investigation of the quarantine station, has decided that it is unnecessary to remove the station closer to New Orleans

Personal.—Dr Joseph D Tuten has succeeded Dr S George Kreeger resigned, as president of the Board of Health of Lake Charles——At a meeting of the Fifth District Medical Society at Tallulah a medal was presented to Dr Thomas E Wright Monroe for original research in the treatment of malaria by the intravenous injection of quinin The medal was presented by Dr Oswald W Cosby on behalf of the society——Dr Clarence Pierson superintendent of the East Louisiana Hospital for the Insane, Jackson, has resigned——Dr E M Ellis Crowley has been appointed a member of the State Board of Health succeeding Dr Henry B White, Gueydan, who has been made state medical inspector

MARYLAND

Hospital Dedicated—The new Emergency Hospital Easton, was formally dedicated November 23

Personal.—Dr Nathan G Keirle has been reappointed chief medical examiner of Baltimore city by Health Commissioner John D Blake Dr Keirle has held this position for many years——Dr Henry G Branham was also reappointed assistant chief medical examiner——Dr Henry O Reik gave the third of a series of lectures during the past week the subject being 'Our National Parks —Dr T C Janeway has been elected president of the Baltimore community workshop

Health Department Gets Additional Appropriation—Health Commissioner Blake has been allowed practically all he asked for in the way of appropriation, except that required for a new hospital building at Quarantine and an additional ward building and a home for nurses at Sydnum He was, however, given an appropriation for an additional tuberculosis dispensary in North Baltimore The total increase will aggregate about $40,000

Society Meets at Training School—The Baltimore County Medical Society held a meeting November 17 at the Rosewood Training School, Owings Mills The Society was entertained at luncheon by Dr Frank W Keating, superintendent of the school, and later made an inspection of the building under the guidance of Dr Keating and his assistant Clinics were afterward held by Drs Keating and Kenneth B Jones, Baltimore

Charity Campaign Opened—A campaign to raise $225,000 for the support of the organizations composing the Alliance of Charitable and Social Agencies of Baltimore was begun during the past week The campaign was organized at a dinner held at the Emerson Hotel when various teams were appointed to secure the money in the time limit, two weeks A luncheon is held every day at the City Club, at which time each team reports the results of its day's work. Thus far over $77 000 has been raised

University to Ask State Funds—The University of Maryland will ask the legislature at its next session to grant a substantial annual appropriation Of recent years the institution has received no money from the state except the grants to the hospital and St John's College which is an integral part of the university Since the recent consolidation of the university with the College of Physicians and Surgeons, there has been greater need for funds and although the legislature appropriated $15 000 for the school in 1915 and a like sum in 1916 the money is said not to have been paid to the institution

MASSACHUSETTS

Cancer Clinic to be Established—Carney Hospital, Boston announces the establishment of a clinic for the treatment of cancer and other malignant diseases by the use of radium The clinic will be opened late this month or early in January It will be under the supervision of Dr John T Bottomley and the radium for use has been donated by M Douglass Flattery of Boston

School Physicians Named—The school committee of Boston has appointed forty physicians as inspectors of schoolchildren Each physician will receive a salary of $504, excepting one later to be selected who will act in the employment certificate office and will receive $900 a year These appointees will take the place of the health board physicians who formerly were assigned to duty in public schools

Honor Old Members—Drs Edward Cowles, Plymouth, Samuel H Durgin Duxbury, A Elliott Payne, Brockton, Horatio F Copeland Whitman, and Calvin Pratt Bridgewater, all of whom have been in practice more than fifty years and all of whom in addition, were veterans of the Civil War and are still engaged in active practice were guests of honor at a banquet given by the Plymouth Medical Society at Brockton November 23 Dr Gilman Osgood, Rockland, officiated as toastmaster

Decennial of Social Service Department.—The tenth anniversary meeting of the social service department of the Massachusetts General Hospital was held in the institution November 30 Dr Richard C Cabot presiding The program includes papers by Mr Homer Folks on "Humanizing the Institution , by Mrs William H Lathrop on 'The Responsibilities of Popularity" and a discussion by Dr Richards Eustis, Cambridge Miss Clara M Welsh and Thekla Andren on 'What Was Done for Rebecca Aronobsky by Those Who Did It," an illustration of the care of heart disease in children

Personal—Dr Hugh Cabot Boston, read a paper at the monthly meeting of the surgical section of the Hartford (Conn) Medical Society November 22——Dr Stanley S Osburn Peabody who has been on duty at Uskub Serbia is believed to have been taken prisoner by the Bulgarians——Dr George A Powers, Worcester, has been appointed associate medical examiner in Worcester County and Dr William O Faxon, Stoughton, has been reappointed medical examiner for Norfolk County——Dr Robert Williamson Lovett, Boston, has been elected John B and Buckminster Brown professor of orthopedic surgery in Harvard Medical School

MINNESOTA

Anthrax—A death from anthrax was reported in the returns to the State Board of Health for October, in the person of a farmer's wife at Rapidan, Blue Earth County, who was said to have been stung on the cheek by a bee or wasp The diagnosis was made by two physicians of Winona The State Board was not notified of the case until the woman's death

Territory Served by Mankato Laboratory—The State Board of Health has authorized the extension of the territory served by the Mankato Branch Laboratory This will include all the counties of Lincoln, Lyon, Redwood, Blue Earth, Brown, Nicollet, Rock, Nobles, Jackson, Martin and Faribault and portions of Yellow Medicine, LeSueur and Waseca counties The examinations made by the laboratory include sputum examinations, the Widal test and cultures for diagnosis and release from quarantine for diphtheria

Sanatorium Opened—The new tuberculosis sanatorium for Goodhue County, erected at a cost of $36,000 at Mineral Springs, near Cannon Falls, which will accommodate from thirty-five to forty patients, has been officially dedicated and is open to receive patients With the opening of this institution, four similar sanatoriums are now in operation, and ten others under construction——At the state sale of lands held at Brainerd, November 20, the State Fish Hatchery, Deerwood, was sold at its appraised valuation to the Crow Wing-Aitkin County Tuberculosis Sanatorium Commission The tract of land purchased includes 44¼ acres, with an eight-room two-story modern house The site is about 2 miles from Deerwood, near the Northern Pacific and Soo railways

Personal—Dr William R Bagley has resumed the practice of medicine in Duluth, after ranching in Oregon for five years——Dr James S Gilfillan, St Paul, was operated on for appendicitis in St Luke's Hospital in that city, December 1——Dr Carl A Scherer, Minneapolis, has moved to Fargo N D——Dr Ernest E Wells, Stillwater, coroner of Washington County, has assumed duties as sheriff on the death of that officer——Dr Gerald R Maloney, Belle Plaine, who has been ill, has recovered and resumed practice——Dr Frederick U Davis, Faribault, fractured his arm while cranking his automobile, November 14——Dr Edwin S Muir, Winona, who was operated on recently for appendicitis at the Winona General Hospital, is convalescent——Dr Honore D Valin, pathologist to the St Peter State Hospital, has resigned to accept a similar position at Fort Wayne, Ind——Drs Alexander H Brown and Thomas Lowe have associated themselves together to conduct a hospital to be known as the Pipestone Hospital——Dr Francis H Gambell was elected mayor of Thief River Falls at the recent election——Dr Holland T Ground of the staff of St Peter's State Hospital, who was operated on for appendicitis recently, is convalescent

NEW JERSEY

Water Company Held for Typhoid—The Mt Holly Water Company has been held responsible for causing typhoid fever during the outbreak in 1912, by a jury in the Burlington County Court which awarded $500 to William S Fryer in his suit to recover on account of the illness of his daughter This is the second successful suit against the water company

To Enlarge Tuberculosis Pavilion—Release from the crowded conditions of the Tuberculosis pavilion of the Soho Isolation Hospital, Newark, was promised, November 17, when the building committee of the board of freeholders eliminated the proposed new laboratory and substituted an additional ward for tuberculosis patients A bond issue of $60,000 has been asked for this purpose

Personal—Dr Joseph W Williams has been appointed city physician of Paterson to succeed Dr Paul E Rauschenbach, resigned——Dr James J McGuire, Trenton, has been appointed a member of the State Board of Medical Examiners, succeeding the late Dr Horace G Norton——Dr Jacob C Price, Branchville, has been appointed chief of the division of bureau administration, R B FitzRandolph, chief of the laboratory of hygiene, Dr A Clark Hunt, Metuchen, chief of the bureau of medical supervision, and Dr Millard Knowlton, Trenton, chief of the bureau of education and publicity of the State Department of Health——Dr Britton D Evans, Greystone Park, has been appointed chairman of the committee to prepare legislation for better care of the insane

NEW YORK

Personal—Dr C M Louis Hacker, Albany, has resigned as instructor in surgical pathology in the medical department of Union University, Albany

New York City

Home from Serbia—Dr George F Adair, Lynbrook, L I, has returned from Serbia, where he was in the service of the Serbian Red Cross

New Convalescent Home—The New York Association for Improving the Condition of the Poor has opened a convalescent home for wage-earners at Sea Breeze, Coney Island

Food Inspector Dies—Bayard Clarke Fuller, supervising inspector of food in the New York Department of Health from 1890 to 1911, died in the Post-Graduate Hospital, New York City, November 11, aged 52

Memorial to Dr Blackwell—A tablet in memory of Dr Emily Blackwell and her sister, Dr Elizabeth Blackwell, has been placed in the New York Infirmary for Women and Children, which was founded by them The bronze medallion on the tablet is the work of Victor D Brenner of New York

Leprosy—Two patients with leprosy have recently been the subject of investigation by physicians of the New York City Health Department It is said there are only ten known lepers in the city, all but three of whom are confined in institutions These three are under surveillance by the health board

Hospital for Wall Street Assured—The proposed Broad Street Hospital now seems assured, as it is announced that $50,000 has been raised This sum was fixed by other wealthy men in the Wall Street district as the necessary requirement before they would contribute, and makes the prospect of increased funds assuring

Academy of Medicine Elects Officers—At the stated meeting of the New York Academy of Medicine held December 2, officers were elected to fill expired vacancies The term of the president Dr Walter B James, does not expire until 1916 Dr George David Stewart was elected vice president and Dr Frederick T Van Beuren, Jr, recording secretary

Personal—Dr Mary M Crawford has returned from work with the American Ambulance, Paris——Dr Andrew J Gilmour lectured before the Vassar Institute, Poughkeepsie, November 30, on "Climbing the Canadian Alps"——Dr Robert C James has retired from active practice and will make his home near Lexington, Ky——Dr Sumner Everingham has returned from eight months' service in Serbia

Medical Relief Expedition for Germany—*The second medical relief expedition for Germany and Austria-Hungary, dispatched by the American Physicians Expeditions Committee, sailed for Copenhagen on the* *Hellig Olav,* November 25 The expedition is headed by Dr Fred Kammerer, who takes with him three other surgeons and six nurses and a complete outfit for the equipment of a hospital with 300 to 400 beds

Demand for Women Doctors Starts Campaign—The board of trustees of the New York Medical College and Hospital for Women has set out to raise $200,000 by Sept 1, 1916 The money will be used to erect what has been called "an emergency plant" This step is being taken in response to the demand from Europe for women physicians to take the place of men whose services have been required by their country and in this country for social work

Columbia Courses at Long Island College—Beginning with September, 1916, Columbia University will give, at the Long Island College Hospital, Brooklyn, a year of college work in physics, chemistry, biology, English, French and German This work is especially planned to enable prospective medical students to meet the admission requirements of the Long Island College Hospital The course will, however, be open and suitable for all, and those who take it will receive university credit

State Health Officer Wants Half a Million—State Commissioner of Health Biggs has appeared before the Government's Budget Committee to plead for an increase in the appropriation for his department The chief needs are the creation of a division for the prevention of tuberculosis the extension of laboratory work and the payment of full salary to sanitary supervisors The funds provided for the present fiscal year were not sufficient by $79,000 to pay the expert chemists engaged in blood tests and in the preparation of diphtheria antitoxin and other serums

Hospital of Rockefeller Institute—The Rockefeller Institute for Medical Research maintains a hospital in connection with its research work to which a limited number of patients is admitted According to a *Bulletin* just issued by this hospital, patients ill with acute lobar pneumonia, with diabetes mellitus, heart disease and nephritis are now admitted Physicians having such patients may communicate with the hospital No charge is made for treatment or other services Patients most acceptable at the present time are those cases of heart disease with broken compensation, especially those with edema, and cases of nephritis with severe symptoms and edema or those with threatened uremia

Radium Sanatorium Opened—An institution which occupies two private houses on West Seventieth Street is now open and receiving patients there being at the time of writing eighteen patients under treatment Already 300 milligrams of radium have been delivered to the institution and $130 000 worth has been contracted for The pathologic and biologic laboratories are being thoroughly equipped for the study of malignant conditions, and it is stated that all alterations in the building will be completed by January 1 There will be a dispensary for the treatment of outpatients The staff in surgery consists of Drs Cornelius G Coakley, John A Fordyce Charles H May, George D Stewart, Winfield Ayres, Henry C Coe Anthony Bassler, Eugene C Savidge George M MacKee William C Lusk Frederick E Sondern and Joseph B Bissell The medical staff of the institution has not yet been announced

Tuberculosis Week.—Since December 6 to 12 has been designated as National Tuberculosis Week, an effort will be made in this city to revive interest in tuberculosis, which is still the greatest public health problem The Department of Health will place emphasis on the importance of regular medical examinations Wednesday December 8 has been designated 'Medical Examination Day Hundreds of thousands of circulars are being distributed to the people of the city urging them to consult their family physicians and to submit to a thorough physical examination This effort of the Health Department is receiving the cooperation of the Charity Organization Society, the Tuberculosis Committee or the Brooklyn Bureau of Charities, the Metropolitan Life Insurance Company and the Prudential Life Insurance Company It is also suggested that physicians can render invaluable aid to the cause of public health by advocating regular medical examinations to their patients and by carrying out such examinations with care and thoroughness

Examination of Food Handlers by Private Physicians—Important changes have been made in connection with the examination of food handlers by private physicians Private physicians will be authorized to examine food handlers employed in kitchens and dining rooms of restaurants and hotels in compliance with the regulations of the board of health The physician desiring such authorization must make application to the department of health, and must observe the instructions of the department requiring that report blanks issued by the department of health be used, that a report card must be made out for each applicant, that all information asked for must be given, and an entry made in every blank space Because of lack of laboratory facilities the department of health is not yet prepared to demand a Widal test in every case, but a specimen for a Widal test must be forwarded in every instance in which the applicant gives a history of having had or having been exposed to typhoid fever A parole system has also been established for food handlers who are found to have a quiescent or arrested tuberculosis or a tertiary syphilitic condition without open lesion These applicants are given a short term certificate good for a period of one month and are required to present themselves at the end of that time, when on the recommendation of the examining physician, a renewal of the short term certificate for another month is given These advisory physicians give no treatment of any kind

PENNSYLVANIA

Personal.—Dr Edward S Dickey, Pittsburgh, will join Dr Esten L Hazlett, formerly of Pittsburgh, in Red Cross work at Tiflis, Russia

Health Exhibit Complimented—The state commissioner of health has received a telegram complimenting the Pennsylvania Health Department exhibit at the Panama-Pacific Exposition and asked that it be made a part of the government exhibit at the Panama National Health Exhibition which opens January 1

Communicable Diseases—The authorities of Jessup have ordered schools, churches, nickel shows and dance halls closed and have forbidden congregations of people on account of the prevalence of smallpox——The Walnut Street School, Hazleton, has been closed because of the existence of fourteen cases of diphtheria——On account of the prevalence of diphtheria in *Shamokin Dam, the schools* have been closed for fumigation

State Takes Charge of Borough Health Administration—Commissioner of Health Dixon on November 23 took charge of the public health administration of the boroughs of Jacksonville Hartleton Grand Valley, Curwensville, Meshoppen, New Buffalo Jefferson, Rice s Landing, Greensboro, Mt Morris, Finleyville Driftwood Cormont Hagerstown, Conneaut Lake, Venang Troutville, *New Washington,* Glen Hope Waterford Cranesville and Lockport This action was taken because the local boards of health were either inactive or not organized

Philadelphia

Favors Reconstruction of Hospital—Director Ziegler, of the Department of Health and Charities, favors the reconstruction of the Pennsylvania Hospital and endorsed the proposal of Senator James P McNichol which provides for an eventual expenditure of $8,000,000 in this work

Civil Service Examination—The civil service commission has scheduled for December 17 an examination for outdoor physician with an annual salary of $540 Applicants should call in person at the office of the commission, room 875, city hall, between 9 a m and 4 p m Applications must be executed and filed with the commission not later than three days prior to the day of the examination

Mutter Lecture—The Mütter lecture for 1915 will be delivered in the Thompson Hall, College of Physicians Twenty-Second Street above Chestnut on Friday, December 17, at 8 30 p m by Dr Rudolph Matas, professor of surgery in Tulane University, New Orleans, on "The Fundamental Principles that Underlie the Surgical Treatment of Aneurysm'——A reception will be given to Dr Rudolph Matas *New Orleans* at the Hotel Rittenhouse immediately after the Mutter lecture, December 17

Women Help City Hospitals—On November 30, Dr S Lewis Ziegler director of public health and charities appointed a 'Women's Advisory Council" to take charge of charity work at the Philadelphia General Hospital and the Philadelphia Hospital for Contagious Diseases The work of the council will be in line with the project for the establishment *of a greater hospital, the removal of the insane* from Blockley to Byberry and the removal of the indigent from the Blockley Alms House to Holmesburg

Personal.—Dr Andrew Anders was seriously injured in a collision between the automobile in which he was riding and a trolley car, November 29——Dr Douglas T Davidson of the staff of the University Hospital will sail from San Francisco early in January for China where he will become a member of the faculty of the medical *department of the* College of Changsha, Hunan Province, which is operated by Yale University Dr Davidson will be accompanied by his wife and two children——Dr John R Wells of the staff of the Pennsylvania Hospital and four nurses sailed from New York on the *La Touraine,* November 27, for France, where they will serve in the American Ambulance Hospital Neuilly——Dr Malcolm C Grow who left September 12 with Dr Edward H Egbert of Washington D C for Russia, was recently appointed chief surgeon with the rank of lieutenant-colonel on the twenty-first flying column of the Russian Red Cross under Commander Andrew Kalpashnikoff former secretary of the Russian Embassy at Washington——Dr Charles Bingham Penrose has been appointed a member of the Fairmount Park Commission to fill the unexpired term of Peter A. B Widener

CANADA

Personal—The Hon Dr Thomas S Sproule, Markdale, Ont, speaker of the Canadian House of Commons has been appointed a member of the Canadian senate——Dr George E Clerk, Melville Sask., has been appointed medical officer of the Sixty-Ninth Battalion, a French-Canadian battalion for overseas service

Medical Board at Camp Toronto—A medical board has been appointed to sit daily in *Toronto* in connection with sick soldiers in that divisional area This board consists of the following medical men Lieut-Col George Acheson Hamilton, Capt Albert H Rolph Toronto, Capt. Daniel A McClenahan, Hamilton

Hospital News—Fire broke out in the military hospital at Belleville, Ont, December 2 About 19,000 pounds of ammunition were stored in the building, but this and seven or eight patients were removed safely——A new Canadian hospital has been opened at Ramsgate, England, with accommodation for 600 patients Col Walter L Watt of Winnipeg is in charge——Lieut-Col Harry B Anderson and Lieut-Col Herbert A Bruce, Toronto, have been appointed to organize the Convalescent Home in Toronto for returned soldiers They will select the medical and surgical staffs at once, whose services will be gratuitous

Free Serums for Ontario—Following on the observations as to the results from the free use of diphtheria antitoxin in Toronto where the general death rate from diphtheria in that city is 16 against 6 in the Isolation Hospital where perhaps the worst cases are treated, the serum being supplied free to the hospital and in large doses, the Ontario government announces its intention to undertake, through the Ontario Board of Health, to supply free practically all the serums used in the province Of diphtheria antitoxin alone it is expected that from 150,000 to 200,000 doses will be required and about 500,000 doses for antityphoid innoculation The serums will be supplied free to physicians, hospitals, boards of health and the public generally Ontario is the first province in Canada to adopt this system of preventing communicable diseases and to lessen the incidence and death rate from those diseases

Ontario Medical Commission Resumes Sittings—Mr H S Osler, K C, Toronto, presented arguments before the Ontario Medical Commission last week, supporting the case for the Ontario College of Physicians and Surgeons, of which body he is counsel He first dealt with "patent medicines," pointing out that the public had no protection against the evils of many of these which were mostly foolish preparations Mr Justice Hodgins thought, however, that some of them were built on common-sense lines Mr Osler said in his understanding of the Ontario Medical Act any man who holds himself out as being competent to relieve suffering is practicing medicine, and in the "drugless healers" phase of his argument, said there should be some provision in the law to prevent unqualified people advertising themselves as "doctors" Mr Osler further stated that the College of Medicine and Surgery for Ontario was at one with all those who had appeared before his lordship pressing that a recognized university degree be the minimum standard of qualification He said doctors as a rule were not given to money making, and they were not prompted by any selfish motives in any effort they may make to have the act amended, it was solely in the public interest His lordship has asked the College of Physicians and the universities to confer and come to some common agreement as to what should be recommended He suggested that such a conference might take up the subject of fees charged by physicians as well as the fees charged for examinations Advertising on the part of any doctor might also be considered, in fact, what the commissioner desired was a full and complete statement of what in their opinion should be the status of the whole matter of medical education, examination and practice The commission sits in Hamilton the present week to hear the chiropractor society there It is understood Mr Justice Hodgins will investigate the college at Davenport for his own benefit

GENERAL

Western Surgeons to Meet—Surgeons from Baltimore to Butte are expected to be present at the meeting of the Western Surgical Association, which will hold its twenty-fifth annual meeting at the Chamberlain Hotel, Des Moines, December 17 and 18, under the presidency of Dr J Rilus Eastman, Indianapolis

First Aid Standardization—The Board on First Aid Standardization recently appointed by President Wilson, held its first meeting in Washington, November 27, and perfected its organization Dr Richard H Harte, Philadelphia, was elected chairman, and Asst Surg-Gen William Colby Rucker, U S P H S, secretary of the board

Alienists Elect Officers—At a meeting of the Interstate Psychiatric Association, held at the Sheppard and Enoch Pratt Hospital, Baltimore, November 23, the following officers were elected president, Dr Henry A Cotton, Trenton, N J, vice president, Dr Edward N Brush, Baltimore, and secretary, Dr Samuel T Orton, Philadelphia

Warning—Dr Hart Beyer, Pittsville, Wis, writes that during the latter part of July an agent called on him selling a vaporizing inhaler alleged to be manufactured in Philadelphia After writing to the address given, however, the letter was returned marked "not in directory," and on inquiry of the commercial agencies the firm named is not known

Opponents of Alcohol and Other Narcotics to Meet—The American Society for the Study of Alcohol and Other Narcotics will hold its forty-fifth annual meeting at the Hotel Raleigh, Washington, December 15 and 16 The public is cordially invited to be present, programs may be obtained from the secretary, Dr T D Crothers, Hartford, Conn

Typhus in Mexico—An Associated Press dispatch of December 4 states that typhus fever, which has been epidemic in and around the City of Mexico, has now increased to an alarming extent The death rate from this disease now exceeds 130 a day and is increasing It is estimated that there are at present 11,000 cases in the federal district and neighboring towns

Stock Plague Expensive—It is estimated that the direct loss due to the hoof and mouth disease epidemic in the United States, up to July 1, was $5,600,000 This estimate was made November 29 in a paper by A J Glover, Fort Atkinson, Wis, on "The Economic Effect of the Hoof and Mouth Disease," which was read before the conference of state and federal authorities in Chicago, November 29

National Examination Board Meets—The National Board of Medical Examiners closed its session at Raleigh Hotel, Washington, November 29, after adopting plans by which it is hoped that every state in the Union eventually will recognize its certificate from the National Board as sufficient credentials for the issue of a license to practice medicine The Medical Corps of three government services are represented on this board, of which Surg-Gen William Braisted, U S Navy, is president, and Col Louis A LaGarde, M C, U S Army, treasurer

Labor Legislation—The ninth annual convention of the American Society for Labor Legislation will be held in the Shoreham Hotel, Washington, December 28 and 29, and the program is to be devoted to vital questions of the day, the main topics being the Lafollette Law for the Protection of American Seamen, The New York Industrial Commission, A Practical Form of Health Insurance for Wage-Earners, and The Progress Made Throughout America in Industrial Hygiene, with Especial Reference to Dangerous Trades, Child Labor, Protection of Female Wage-Earners and The Factory Situation The closing meeting of the convention is to be held jointly with the Pan-American Scientific Congress, and the especial topic will be the "Progress Made in Industrial Hygiene in the Different Republics of the Two Americas"

Dogs as Carriers of Disease—The Department of Agriculture has issued a bulletin on dogs as carriers of disease Among the most interesting and important of these diseases at the present time is foot and mouth disease among cattle, of which, it is said, dogs act as mechanical carriers by running over infected farms Other maladies which may be spread by dogs are rabies, hydatid, ringworm, favus, tapeworm, round-worm, and tongue worm These may be conveyed to human beings Dogs may also be the carriers of fleas and ticks and by this means aid in spreading bubonic plague and spotted fever Dogs may become infected with various parasites by feeding on carrion and should be prevented from obtaining access to such material In outbreaks of ringworm or favus among children, the dog should be suspected as a possible source of the trouble

Stereopticon Loan Library—The U S Public Health Service announces that the service has established a stereopticon loan library, consisting of over 2,000 slides, the majority of which are original, dealing with public health problems These slides will be loaned without cost to physicians, health organizations, educators, welfare workers and others on application to the service They cover such subjects as Alaska, 83 views, children and children's diseases, 50 views, health exhibits, 90 slides, hookwork, 90 slides, Indians, 50 views, leprosy, 45 slides, living conditions, a small number, malaria, 275 views, milk, 80 views, mouth hygiene, 12 slides, parasites and organisms, over 200 views, pellagra, over 500 views, rural schools, 10 slides, service general, 320 slides, smallpox, 90 slides, trachoma, 120 slides, tropical diseases, 40 views, tuberculosis, 100 slides, typhoid fever, 350 views, yellow fever, many slides, as well as slides of other miscellaneous subjects These slides are 3½ by 4 inches and will fit most any lantern Catalogs of these views will be sent on request, out of which selections may be made, or the service will make the selections on any subject desired to be presented

Mental Hygiene Surveys—The National Committee for Mental Hygiene has completed surveys with reference to public and private provision for feebleminded, epileptics, insane and allied defectives, for Pennsylvania, South Carolina and Wisconsin Surveys are under way for Arkansas, Missouri, Texas and Florida State surveys will be undertaken for Maine, Rhode Island, Connecticut, New Jersey, North Carolina, Georgia, Tennessee, Indiana, Illinois, Kansas, Oklahoma, Washington, Oregon and California A map issued by the committee shows that separate provision for the feebleminded and the epileptic has been made in the following states Massachusetts, *Connecticut*, New York, Pennsylvania, Virginia, Ohio, Michigan, Indiana, Illinois Iowa, Kansas and Texas In Wisconsin Minnesota, South Dakota, Missouri, Oklahoma, Colorado, Wyoming, Washington, Oregon and California the feebleminded and epileptics are segregated from the insane, but are housed in the same institution Epileptics are not cared for by the state in states not mentioned. The following have no separate institutions for either feebleminded or epileptics Nevada, Utah, Arizona New Mexico,-Arkansas, Louisiana Mississippi, Tennessee, Alabama, Georgia, Florida, South Carolina and West Virginia

Examination for Medical Corps of the Navy—An examination for appointment in the Medical Corps of the Navy will be held on or about February 23 at Washington, D C., Boston, New York Philadelphia, Norfolk Va Charleston S C., Great Lakes (Chicago), Mare Island, Calif., and Puget Sound, Wash.

Applicants must be citizens of the United States and must submit satisfactory evidence of preliminary and medical examination The first stage of the examination is for appointment as assistant surgeon in the Medical Reserve Corps and embraces anatomy, physiology materia medica and therapeutics general medicine general surgery and obstetrics. The successful candidate must attend a course of instruction at the Naval Medical School which will begin on or about Oct. 1 1916 During this course he receives a salary of $2 000 per annum with allowance for quarters heat and light and at the end of the course, if he successfully passes examination in the subjects taught in the school he is commissioned assistant surgeon in the Navy to fill a vacancy Candidates must be between 21 and 30 years of age, graduates of a reputable school of medicine and must apply for permission to appear before a board of medical examiners The application must be in the handwriting of the applicant and accompanied by letters or certificates from two or more persons of good repute testifying from personal knowledge as to the good habits and moral habits of the applicant a certificate to the effect that the applicant is a citizen of the United States a certificate of preliminary education from an accepted high school or an accepted equivalent a certificate of medical education giving the name of the school and date of graduation and a certificate regarding hospital service or special education and professional advantages which the applicant has had

FOREIGN

Deaths Abroad—C Vincenti professor of hygiene at the University of Milan and founder and director of the *Corriere Sanitario* later changed to the *Avvenire Sanitario* aged 52——O Ughi, professor of pathology at the University of Parma

Octogenarian in the Field—A Berlin exchange states that his eighty-first birthday was recently celebrated by Dr Hertwig of that city now on active service with the troops at the front. This is his fourth military campaign, as he served in 1864, 1866, and in the Franco-Prussian war, and he is still well and active.

Extend Embargo Lists—In Denmark cotton goods and dried casein have been added to the list of products subject to embargo In France various food products, fruit, gum, mica, petrolatum and various types of sacks have been placed on the embargo list England has prohibited the exportation of cotton wadding, cotton wool and iron ore of all descriptions to all destinations

Hospital Factor for Peace—Baron Shibusewa, the Japanese financier at a luncheon given in his honor in New York by the American council of St Luke's International Hospital, Tokyo, said that the completion of the institution would prove a factor toward international peace The plans for the hospital were endorsed by the emperor, who had contributed $25 000 toward the fund The institution, he believed, would do much to bring closer relations between the United States and Japan

Bordeaux Exchange Resumes Publication—In November the *Journal de Médecine de Bordeaux* issued its first number since August, 1914 It is to be continued as a monthly This first issue contains a tribute to the twenty medical students at the University of Bordeaux who have fallen in the war It also lists the honors that have been conferred on members of the medical faculty and student body for conspicuous gallantry The leading and only original article is a clinical study of 330 cases of typhoid in soldiers

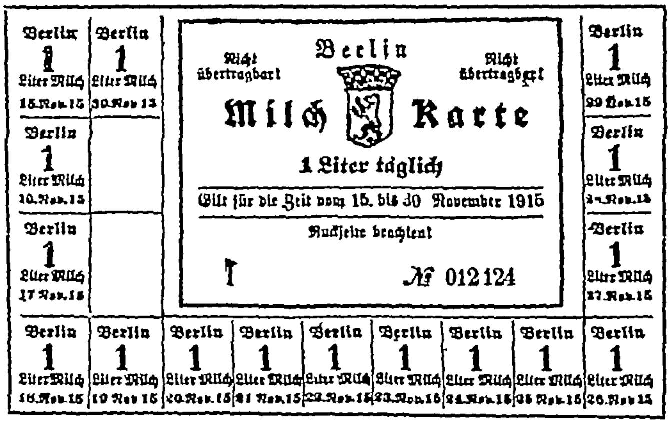
BERLIN LETTER

BERLIN, Nov 9, 1915

The War

TREATMENT OF WOUNDS IN WAR

In the sixth issue of "Military Surgery," published as a part of the *Beiträge zur klinischen Chirurgie*, Professor von Bruns discusses at great length the treatment of wounds received on the battlefield He says that the causes of shot wounds are entirely different in the present war from what they were in previous wars The wounds caused by artillery fire greatly outnumber the wounds caused by gun fire, being twice as numerous, whereas formerly they constituted from 5 to 25 per cent of all injuries Therefore, the number of large open wounds is also greater than the number of small bullet wounds Bullet wounds are practically never infected, whereas shrapnel and shell wounds are always infected primarily because of the large amount of tissue exposed, the nature of the wound, the tearing of the tissues, the time which necessarily must elapse between the infliction of the wound and the first-aid dressing, irrigation of the wound finger contact probing for bullets and tamponing The lack of sufficient immobilization of the injured part during transportation, especially in the case of bone and joint wounds, is also responsible for the production of infection The statement made years ago that the first-aid dressing practically determined the subsequent clinical course of the wound no longer holds true The primary wound infection is now the determining factor, and the results to be expected from our present knowledge of treatment of wounds are not realized English surgeons have stated that nearly all wounds with the exception of gun fire wounds, were infected and that no antiseptic could be depended on for a germicidal effect. Sir Almroth Wright has discarded the use of bandages, which, when saturated with wound secretion, favor the retention of septic products He recommends the use of a 50 per cent. salt solution with 0 5 per cent sodium citrate in the form of a bath, irrigation or compresses Under this treatment wounds apparently do very well in two or three days Another English surgeon, Sir Watson Cheyne, saturates wounds with pure phenol (carbolic acid) The thin layer of necrotic tissue which results from this treatment is absorbed The German war surgeons combat infection with the aid of the natural antibodies in the human body This is accomplished first of all by placing the injured tissue absolutely at rest immobilizing the extremities for bone and joint wounds If the infection increases in severity counter-openings are made Pieces of bone and foreign bodies are removed from the wound by irrigating with sterile salt *solution* When *suppuration* is present a moist dressing is applied, one that is not covered by rubber tissue, so that evaporation is furthered rather than prevented In very severe cases resort is had to the continuous bath or continuous irrigation Open wound treatment is also resorted to by some surgeons



Berlin
Nicht übertragbar!
Nicht übertragbar!
Milch Karte
1 Liter täglich
Gilt für die Zeit vom 15. bis 30 November 1915
Rückseite beachten!
№ 012124

Berlin 1 Liter Milch 15.Nov.15
Berlin 1 Liter Milch 30.Nov.15
Berlin 1 Liter Milch 16.Nov.15
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Berlin 1 Liter Milch 29 Nov.15

Milk ticket used in Berlin for preferred consumers.

REGULATING THE BERLIN MILK DISTRIBUTION

For the purpose of regulating the distribution of milk the Berlin authorities issue milk cards' which give the holder the privilege of being among the first to receive milk. Children under 6 years of age nursing mothers, and the sick and decrepit are given the preference Such persons are supplied with a "milk card" by the bread commission, and on presentation of this card to any milk dealer they are given first attention, but must call for this milk before a certain hour

ANTHROPOLOGIC INVESTIGATION OF PRISONERS OF WAR

The president of the Austrian Anthropological Society, Professor Toldt, and his students have examined 3,700 prisoners, making thousands of measurements This investigation has determined that among these people, as among other nationalities, there does not exist a pure race but only mixtures All of these people represent various racial elements which have been molded into one people by language and circumstances Even the Poles consist of five such groups In order to isolate these types, one must examine a large number of persons The type as such does not appear to be conveyed by heredity, but certain features of each type appear in the offspring To carry on such an investigation properly one must follow these racial characteristics geographically, for instance, in northwest Russia and extending through the country down to the Ural mountains are found the Finns, and coming from the east westward from the Ural mountains to the Volga, one finds the Mongolian races Among the former the prevailing type was that of the great Russian numbering 52,000 000 and resulting from a mixture of the Slav with the Finn, the German, the Tartar, etc There were three different types two blond and one brunette The little Russians, together with their relations in Galicia Bukovina and Hungary, number 32,000,000 The white Russians number only 3 500,000, and are said to speak the purest Russian dialect The Litauers and the Slavs in East Prussia number 32 000,000 They live in the governments of *Kowno and Wilma, and also in* Grodno and Suwalki They are said to speak the oldest of old Indo-Germanic tongues They are Catholics, but are strongly inclined to pagan practices

Alcohol and Crime

Speaking of the relationship of alcohol and crime in the Prussian statistics bearing on prisoners for 1913-1914 the president of the supreme district court, Mr Lindenberg, says Of the new male prisoners, 1,141, or 26 6 per cent (24 2 per cent in the previous year), committed the deed while intoxicated Among the female prisoners this percentage was considerably lower, 5 4 per cent Among the male prisoners 15 1 per cent, and among the female prisoners 12 per cent, were habitual drinkers

LONDON LETTER

London, Nov 19, 1915

Medical Research Under the Insurance Act

It may be remembered that under the national health insurance act an annual sum amounting to 2 cents for every insured person was granted for medical research In the year 1914 this amounted to $275,000 The outbreak of war has modified the scheme to some extent and temporarily, but *the main* idea stands Indeed, the war has afforded a fresh field of inquiry Thus at the outbreak of war it was determined to attack the many problems which were bound to arise on the field The services of Sir Almroth Wright were secured to investigate the bacteriology of wounds, with what results is already well known Sir Almroth's work, indeed, has been revolutionary Researches were also undertaken on the poisons producing gas gangrene, and on the nature of typhoid fever The work on antiseptics, in which many investigators have been engaged, has been assisted by the Research Committee The committee also sent Dr Freeman, of St Mary's Hospital, to Galicia in 1914 to investigate strains of cholera infection and to bring cultures to this country so *that if need* be—that is, if the disease spread—vaccines could be prepared The work of Lieutenant-Colonel Leiper, which has resulted in the discovery of the life history of the Egyptian bilharzia—a worm producing a disease which *has long* been regarded as one of the plagues of Egypt—was also assisted by the committee Lord Cromer, at the Royal Society of Medicine, characterized this work as of first-class importance to Egypt In the epidemic of cerebrospinal fever which lasted from January to June, much research work was accomplished Many of these researches have confirmed the fact that various conditions influence the virulence of bacteria, so that bacteria of the same type may show very different properties at different times Work is to be carried on to determine these factors *more precisely*, for it has often been suggested that on these epidemics other outbreaks of disease depend Other special researches include those on dysentery, industrial fatigue and the health of munition workers, the disorders of the soldier's heart, and gunshot wounds All this material will be made available in the official medical history of the war The peace plans of the committee were no less important, and they will, no doubt, be carried out at a later period They comprise investigations of such diseases as tuberculosis, rickets, diabetes, rheumatic infections, rheumatoid arthritis, oral sepsis and heart disease It is believed that the coordinating work of this committee marks the opening of a new era in medicine in this country which will differ from the old in that general statements founded on imperfect observation will be replaced by accurate knowledge gathered by careful and qualified observers in all the fields of medical work, correlated by competent statisticians, and presented in a form calculated to be of *lasting* value

Dr Charlton Bastian

Dr Henry Charlton Bastian, F R S, F R C P, has died at his residence, Chesham Bois He was educated at University College, London, where he was successively professor of pathologic anatomy, and professor of medicine In medicine he was principally interested in nervous diseases He was one of the brilliant galaxy which included Hughlings Jackson, Gowers *and* Ferrier, *who formed the staff of the* National Hospital for the Paralyzed and Epileptic, and created a British neurology His principal works, many of which were translated into other languages, were "The Brain as an Organ of Mind", "Paralyses Cerebral, Bulbar, and Spinal," and "Aphasia and Other Speech Defects," but it was by his work on the nature and origin of life that he was most widely known, because of the stoutness and persistence with which he maintained, contrary to all orthodox opinion, that life can arise from inorganic material He enclosed various materials in glass tubes, which he then sealed up and raised to temperatures of from 130 to 145 C for from five to twenty minutes According to all orthodox opinion, this should have killed every living thing in the tubes, yet on opening the tubes nine months later Dr Bastian declared that he found living micro-organisms His views were hotly contested from the moment when, in 1870, he first published *them* Huxley *and* Tyndall *entered* the arena against him, and even Pasteur was drawn into controversy Science accepted the arguments of Pasteur, and rejected those of Bastian Yet he did not lose heart, but continued to wage his fight to the end of his long life His first book on this subject, "The Beginnings of Life," was published as long ago as 1872 In 1904 appeared "Studies in Heterogenesis," in 1905 "Nature and Origin of Living Matter," and in 1907 "Evolution of Life" Only a few years *ago he had an* embittered *controversy* with *the Royal* Society, of which he was a fellow, because of its rejection of his Memoir "The Origin of Life," in which he once more with unabated vigor assailed the prevailing doctrines

The Protection of Patients in the London Hospitals Against Air Raids

The Zeppelin raids on London are a distinct danger to the patients in the numerous hospitals Indeed, more than one hospital had a narrow escape, being missed by only a few yards The problem of helpless patients unable to flee in case the hospital was set on fire by an incendiary bomb is a difficult and distressing one During the night when these raids occur the staff which remains on duty would be quite unable to remove the patients with sufficient speed All the great hospitals contain wounded soldiers in considerable numbers, and it was felt that it would be a reproach to London if any of these men, who had suffered so much already for their country, were to be burnt to death at home After the outbreak of war, volunteer corps consisting of men past the age eligible for the army (40 years) have been formed all over the country for home defense The idea occurred to one of these corps to provide *a detachment* of men each night at a large hospital which appears to be in a particularly dangerous situation, so as to be ready to remove the patients from any wing which might catch fire Their services were gladly accepted by the hospital authorities who made the following arrangement Each man is provided with an ash stretcher pole The patients are divided into three classes (*a*) those in bed who cannot walk or be carried, (*b*) those who can be carried on the back, or by bandy chair, (*c*) those who can walk The mattresses of the first group at all times have under them a canvas sheet with a wide hem on each side through which poles can be passed, thus forming a stretcher A supply of these sheets is provided in each ward, *and it* is the duty of the sister to see that one is placed under the mattress of every bed occupied by a patient who is too ill to be carried Each of these beds is indicated by a crimson tape, so that the stretcher-bearers will know at a glance which patient they have to remove on the improvised stretchers The third group will be directed and aided to leave the wards by the emergency staircases at the ends of the wings while the patients who have to be carried are being removed by the main staircase

Sanatogen Again

The eclipse of this fraudulent nostrum produced by the war is only partial Though all trading with Germany is prohibited there is nothing to prevent the stuff being produced in this country and exploited in the usual manner so long as none of the profits are sent to Germany However, the protection of the patent disappears for the time, and, as announced in a previous letter, a British company has taken advantage of the fact and produced an article called sanaphos, which it claims, is much better than sanatogen Sanatogen has just obtained a gratuitous advertisement by a question in Parliament as to whether a German alien enemy is carrying on the business and why he has not been interned The government reply was that the London business of the Sanatogen Company was now independently carried on in the interests of this country under a British supervisor appointed by the board of trade and any profits are paid over to the public trustee The case of the individual referred to was carefully considered who in view of the special circumstances, recommended that he should be exempted from internment on condition that a bond for $5 000 for his good behavior was entered into by two British sureties

PARIS LETTER

Paris, Nov 18, 1915

The War

TREATMENT OF HEAD WOUNDS FROM FIREARMS

This subject was discussed at length at the Reunion medicale de la VI-e armee, at which Dr Paul Mathieu of Paris reported fifty cases of this nature All the wounds were surgically explored no matter how insignificant the injury to the scalp seemed When the external surface of the skull was merely grazed the skull was opened up so that the condition of the inner side might be observed The dura mater was uncovered and incised in one case in which the skull was intact, but the patient had crises of localized epilepsy Twenty-seven other patients had lesions of the bone or of the brain and eight patients with osseous lesions without perforation of the dura mater all made an operative recovery The operation consisted of complete removal of fragments The existence under the intact dura mater of a hematoma or of a focus of cerebral contusion does not always necessitate incision of the dura mater, which may produce serious complications In cases of serious cerebral signs, however, evacuation of the subdural hematoma may be indicated It should be recognized that often patients with insufficiently drained wounds of the head have died in the base hospitals from late infectious complications Such patients should not be too early regarded as cured Permanent infirmities are frequent after wounds of the head Some patients retrogress completely others partially Neurologists should follow these patients for a long while.

Dr Ruotte emphasized the very great difference in the seriousness of wounds of the head in accordance with the involvement or noninvolvement of the dura mater When, during an operation, one finds a dura mater intact but tense and glistening the surgeon should consider opening it Ruotte thinks that in such cases simple puncture of the dura mater may give good results Trephining is specifically indicated if one finds the least cranial lesion, even the most superficial If it is merely a scratch of the external surface of the skull, trephining should always be employed Dr Reverchon has had occasion since the beginning of the war to trephine 100 times He finds that wounds of the scalp should always be explored with the greatest care, and that often trephining, where there is a very slight wound of the external surface, enables the surgeon to find lesions that might have been overlooked In cases of hematoma of the dura mater the great danger of systematic incision is infection Therefore, as Ruotte says, there is much reason to use simple puncture in these cases Reverchon punctured the dura mater not with a Tuffier needle which would be unsatisfactory, but with the point of the bistoury When the dura mater presents a wound from fragments of bone or projectile it should be opened up, but this operation is followed by cure only if it is done under conditions of scrupulous asepsis Patients with wounds of the dura mater should not be operated on in ambulances of the first line They should be taken to the rear and operated on only in a place where perfectly aseptic surgery is possible

LABARRAQUE'S SOLUTION AND DAKIN'S SOLUTION

At a recent session of the Societe de chirurgie de Paris, Dr Pierre Delbet professor in the surgical clinic at the Faculte de medecine de Paris called attention to the fact, already mentioned in The Journal (Sept 4, 1915 p 889) that Labarraque's solution and the antiseptic solution of Dakin are obtained by the same process The solution of sodium hypochlorite of the French Codex or Labarraque's solution is obtained by double decomposition of calcium hypochlorite (the chlorid of lime of commerce) and sodium carbonate, the calcium, united to the carbonic acid, is precipitated and the sodium hypochlorite remains in solution with the excess of sodium carbonate The antiseptic solution of Dakin is obtained in the same way, but to the concentrated sodium hypochlorite resulting from the double decomposition is added a certain quantity of boric acid which principally neutralizes *the original alkalinity of the solution* The long-known favorable effect of the hypochlorite solutions of commerce should be attributed to their irritant action on the tissues The treatment to which Dakin subjects the hypochlorite solutions in order to lessen their irritant effect can only diminish their efficacy in the treatment of wounds This is demonstrated every day

Professor Qenu believes that Delbet is right in calling attention to the irritating effect which certain chemical substances have on wounds The antiseptic may be useful in fact, not only because it does not destroy the living cells, but also because it excites their vitality causes the proliferation of the leukocytes and consequently hastens the elimination of elements altered by traumatism and microbes or their toxins

EXTRACTION OF BULLETS FROM THE BLADDER BY THE NATURAL CHANNELS

At a recent session of the Academie de medecine de Paris, Dr F Legueu, professor of the clinic of diseases of the urinary tract at the Faculte de médecine de Paris, read an interesting paper on this subject. Rifle shot and grape shot are of such size and shape that they may be easily and rapidly removed through the urethra without incision For this purpose Legueu uses a special lithotrite modified for the purpose. The instrument, introduced into the bladder by the urethra, seizes the ball by its point on touching it and in less than a minute the extraction is made without anesthesia One patient left the hospital the next day A superior officer who had been unable to walk for eight months was soon enabled to resume his duties The most difficult thing is to ascertain that the ball is actually in the bladder in cases in which it comes from a very distant part of the body and is embedded in the tissues during the whole of the cicatrization of the wound When radiography shows a pelvic ball two successive plates should be made, changing the patient's position If the ball shifts its place, this shows that it is in the bladder Only balls that are free in the vesical cavity can thus change their position. Cystoscopy, however, is the most useful method of exploration for giving an idea of the presence, the situation, the mobility of the ball, the condition of its surface and all the data necessary for the extraction by the natural passage, which remains the best and most expeditious method.

RELIEF OF PHYSICIANS AT THE FRONT

I mentioned in a previous letter (The Journal, Nov 20, 1915 p 1831) that the minister of war had decided that physicians at the rear who had not yet taken their place in the armies should replace their comrades fatigued by fifteen months of campaign Out of over 8,000 physicians at the front, only 1,500 have asked for relief on this ground but there are no more than about 600 of these physicians fit for service who have not been at the front The time set for each physician's departure is determined by his age and by his service in the army The exchange is made regularly but not too frequently, so that there is not likely to be any disorganization which might affect the patients unfavorably

THE FRENCH WOUNDED EMERGENCY FUND

The undersecretary of the military medical service has just decided to accept the aid of the French Wounded Emergency fund, an Anglo-American society the delegate of which in

France is Mrs Hendry, nee Charcot The purpose of the society is to distribute in the various hospitals which receive patients from the army gifts for the improvement of the condition of the soldiers The under secretary has therefore authorized Mrs Hendry and fifteen of her collaborators to cooperate with the head physicians of the hospitals in distributing such gifts

MEMORIAL TO DR. REYMOND

The general council of the department of the Seine and the prefect of police have placed in the surgical operating room at Nanterre the bust of Dr Emile Reymond, who was a senator and surgeon of this establishment and who died bravely in an aviation reconnaissance of the army (The Journal, Nov 21, p 1868) The bust is the work of the sculptor Gauquie The president of the republic and other high officials were represented at this ceremony Several speeches were made recounting the career and the glorious death of Dr Reymond

THE WAR AND THE STATISTICS OF POPULATION OF FRANCE IN 1914

The *Journal officiel* has just published the statistics of population of France in 1914 Ten French departments are still, in whole or in part, under invasion The figures, therefore, apply to only seventy-seven departments instead of eighty-seven, and are also incomplete with regard to deaths during the first five months of hostilities

The following are the figures

1 The number of deaths is provisionally estimated at 647 549 an increase of 58 740 over 1913 (588 809)

2 The number of births is estimated at 594,222, a decrease of 10,232 from 1913 (604,454)

3 The excess of deaths over births was 53,327 This indicates that the population of France diminished last year by 53,327 In 1913 there was an insignificant increase of 15,645

4 The number of marriages was 169,011, a decrease of 78 742 from 1913 (247,753)

5 The number of divorces was 7,884, a decrease of 4,460 from 1913 (12,344)

To estimate the influence exercised by war on the status of the population, it is interesting to compare the changes in population in seventy-seven departments during the last semester of 1913 and the corresponding semester of 1914

1 During the second semester of 1914 the number of deaths recorded was 323,018, as against 280,804 during the corresponding period of 1913, an increase of 42,214

2 The number of births diminished from the one year to the other by 6,676 (300,304 in the second semester of 1913 and 293,628 in the second semester of 1914)

3 The number of marriages decreased by 65 per cent 43,585 in the second semester of 1914 against 122,754 in the second semester of 1913

4 The number of divorces diminished from 6,307 to 2,014

5 The number of illegitimate children increased by more than 2,000 19,798 in 1914 against 17,684 in 1913

NERVOUS AFFECTIONS CAUSED BY BURSTING OF SHELLS IN THE PATIENT'S VICINITY

At a recent session of the Reunion medico-chirurgicale de la X-e armee, Drs Gustave Russy and J Boisseau read an interesting paper on this subject, based on sixty-seven cases of nervous affections provoked by bombardment The conditions in which these disturbances occur are always the same bursting of a shell of large caliber near by, killing or wounding neighboring comrades more or less prolonged loss of consciousness, followed by an outbreak of nervous disturbances The latter may be grouped in three classes

1 Disturbances of hearing and speech (deafness, loss of speech, deafmutism, stammering) The patients sometimes present an expression of terror and mental confusion, sometimes an impassive and stupefied countenance, sometimes an expressive mimicry, gesticulating, pointing to their ears, demanding to write

2 Various nervous complications such as trembling, convulsive crises astasia, paraplegia etc

3 Mental disturbances such as confusion with stupor and delirious ideas

Somatic signs sometimes observed are a very slight and temporary elevation of temperature with often persistent headache In eleven out of sixteen cases of deafness, examination revealed the presence of small lesions, generally old, sometimes recent In seventeen out of nineteen cases examination of the cerebrospinal fluid gave negative results (generally the fluid trickled drop by drop, there was no hyperalbuminosis or lymphocytosis), in two cases there were positive results (slight hyperalbuminosis in one, slight lymphocytosis in the other) The two patients presented mental confusion and the second had albuminuria

Cure always followed the treatment, immediately (that is, within a day), or tardily (within two or three days in the intense forms)

The complications presented in the sixty-seven cases could all be classified as functional or hysterotraumatic There are no signs which give reason to suspect a disturbance of the central nervous system, no reflex trouble, no chemical or cytologic modification of the cerebrospinal fluid All the symptoms disappeared very rapidly under suggestion The ease and rapidity of cure of these patients treated at a date very near the onset of the condition contrasts singularly with the slowness and even the failures observed in the zone of the interior There would appear to be considerable practical value in early treatment from the military point of view

LOCALIZED TETANUS

At a recent session of the Academie de medecine de Paris, Professor Pozzi reported a case of parapVegiform tetanus localized in the lower limbs and appearing early (five days after the wound) following a serious wound of the left foot from a fragment of shell necessitating submalleolar amputation Extremely painful spasms, at first clonic, then tonic, remained localized in the left leg and thigh with a temporary irradiation to the right leg depriving the patient of all rest and sleep The temperature, very high at first, fell after the operation, performed the tenth day The stump healed normally and the general condition became very good but the contracture of the left leg continued The treatment consisted in strong doses of bromids, chloral or other sedatives, as well as massive doses of antitetanic serum Great improvement resulted The convulsions ceased but the contracture persisted, holding the leg strongly flexed on the thigh The prognosis is good but it is to be feared that the stiffness and flexure of the leg will continue for a long time

Cases of partial or localized tetanus are very rare A form of delayed cephalic tetanus is well known, but cases of tetanus localized in a single limb, or monoplegia, are quite unusual up to the present In a recent thesis Ramirez-Martinez was able to collect only two observations Both were cases of wounds of the foot The appearance of tetanus was very much delayed (three months for one and fifteen days for the other) The observation of Pozzi is the first case in which incubation was so short (five days) It is therefore a case of precocious localized tetanus, and also the first case of partial paraplegiform tetanus

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Marriages

George Lauman Laverty, M D, Harrisburg, Pa, to Miss Rebekah Eleanor Kendig of Roland Park, Md, November 20

Ralph Hiram Knapp, M D, Youngsville, Pa, to Miss Margaret I Johnston of Clinton, Mass, September 1

Guy Edward Campbell, M D, Plentywood, Mont, to Miss Helen Collins of Barnesville, Minn, November 10

Henry L Schelling, M D, Brooklyn, to Mrs Isabel Hanson Woodford of New York City, November 23

Clarence Gilbert Goodwin, M D, Chicago, to Mrs Minnie Starr Grainger of Belvidere, Ill, November 24

Joseph Anthony Stockler, M D, Reading, Pa, to Miss Ellen McKeon of Newark, Del, November 27

Seavy Highsmith, M D, Fayetteville, N C, to Miss Ethel Johnson of Red Springs, N C, November 23

Joseph Aloysius Henske, M D, to Miss Kathryne McClanahan, both of Omaha, November 3

Sherman Grant Bonney, M D, Denver, to Mrs Jessie Ellwood Ray, in St Louis, December 1

George Warren Thompson, M D, to Mrs Julia Williams, both of Winamac, Ind, November 25

Joseph H Bloomer, M D, to Mrs Idella M McDavitt both of Quincy, Ill, November 17

Roy Brown Seely, M D, to Miss Emma Gissel, both of Brooklyn, August 4

Deaths

Frederick William Russell, M D New York University, New York City 1870, aged 70, a member of the Massachusetts Medical Society, hospital steward, U S V during the Civil War, formerly physician to the Children's Hospital, Baldwinsville and vice president of the institution, chairman of the Board of Health of Winchendon Mass, and proprietor of The Highlands Sanitarium, Winchendon, eminent as an entomologist and a member of the American Entomological Society, for the last three years a resident of Dallas Texas, honorary president of the Texas Harvard Club and an honorary member of the Dallas Medical and Surgical Association, died at the home of his daughter in that city, November 20

George Reuling, M D University of Giessen, Germany 1866, aged 76, formerly assistant to Dr Pagenstecher of Weisbaden Germany, a practitioner of Baltimore since 1868 one of the founders of the Eye and Ear Hospital as an adjunct of the Maryland General Hospital, a pioneer in operative surgery of the eye and ear, lecturer at a number of medical schools in Baltimore and professor and later emeritus professor of ophthalmology and otology in Baltimore Medical College, ophthalmologist on the staff of the German Hospital, of late years an art connoisseur, died in the Maryland General Hospital November 25, from rheumatic endocarditis

Edward Cummings, M D Medical College of Virginia Richmond 1903 aged 44, a Fellow of the American Medical Association assistant surgeon to the Hinton (W Va) Hospital and bacteriologist to the Chesapeake and Ohio Railway at one time city editor of the *Daily Journal and Tribune* of Knoxville Tenn , a veteran of the Spanish-American War, a prolific writer on tuberculosis to the study and treatment of which he had devoted the last years of his life, died at his home in Hinton, W Va November 25, from pulmonary hemorrhage.

John C Hutton, M D University of Pennsylvania, Philadelphia, 1867, aged 69, first health officer of Harrisburg, Pa , for many years president of the City Board of Health and a member of the staff of the City Hospital, founded the Municipal Hospital for Contagious Diseases, for two terms a member of the board of education and for three years a member of the common council of Harrisburg died at his home in Elkwood New Cumberland Pa., November 20

Henry McKee Tucker, M D University of Maryland Baltimore, 1899, aged 40, of Raleigh, N C , a member and formerly treasurer of the Medical Society of the State of North Carolina, professor of obstetrics in the University of North Carolina and of gynecology in Leonard Medical School, Raleigh, who underwent operation for mastoiditis at Rex Hospital, Raleigh on November 22, died from a secondary meningitis November 24

Benjamin Joy Jeffries, M D Harvard Medical School 1867, aged 82, a member of the Massachusetts Medical Society and American Ophthalmological Society, formerly consulting ophthalmic surgeon to the Massachusetts Charitable Eye and Ear Infirmary State Hospital and New England Hospital for Women and Children, author of Color Blindness Its Dangers and Detection", died at his home in Boston, November 21

Andrew J Martin, M D University of Buffalo, N Y., 1887, aged 55 a Fellow of the American Medical Association and a well-known practitioner of North Tonawanda N Y , a member of the Board of Health and health officer for several years, coroner of Niagara County for three years, died in the German Deaconess Hospital Buffalo November 24, five days after an operation for disease of the intestines

Fayette Kent Waller, M D Miami Medical College, Cincinnati 1878, aged 68, a veteran of the Civil War, and for many years a practitioner of Wabash, Calhoun and Madison counties Ill , who had been an inmate of the Odd Fellows Home Mattoon, Ill, for seven years, died in that institution November 19, from cerebral hemorrhage

William F Ham, M D College of Physicians and Surgeons, Keokuk, Iowa, 1864 Rush Medical College, 1868, aged 72 surgeon of the One Hundred and Seventy-Second Ohio Volunteer Infantry during the Civil War and afterward a practitioner of Middlebury Ind , died at the Soldiers' Home near Lafayette Ind., November 23

William Frisbie Lewis, M D College of Physicians and Surgeons in the City of New York, 1854, aged 85, for many years a practitioner, druggist and banker of Mankato, Minn , a veteran of the Indian War of 1857, since 1887 a resident of California, died at his home in Palo Alto, Calif, November 18 from senile debility

Frederick W Messerve, M D Hahnemann Medical College, Philadelphia, 1885, aged 55, for many years resident physician at Hahnemann Hospital, Philadelphia, professor of ophthalmology in his alma mater and ophthalmologist to various hospitals in Philadelphia, died at his home in Berlin, N J, November 22

Thomas Ayars James, M D New York University, New York City, 1880 aged 65, a Fellow of the American Medical Association and president of the Luzerne County (Pa) Medical Society in 1885 one of the best known practitioners of the Wyoming Valley died at his home in Ashley, November 10, from heart disease

LeRoy R Craig, M D University of Louisville, Ky., 1895, aged 41, a member of the Nebraska State Medical Association, for several terms coroner of Scotts Bluff County, Neb and county health officer and a member of the Board of Health of Mitchell, died at his home in Mitchell, November 24, from heart disease

Elfred Rowe Barney, M D University of Michigan, Ann Arbor 1872, aged 64 a Fellow of the American Medical Association, for twenty one years a practitioner of Wattsburg Pa for twenty years a member of the local school board and for twelve years its president, died at his home, November 17

Daniel Berry, M D Jefferson Medical College, 1866, aged 80 a veteran of the Civil War in which he served as assistant surgeon of the Eighty-Seventh Illinois Volunteer Infantry later a practitioner and druggist of Carmi, Ill died at his home in that city November 19, from cerebral hemorrhage

J Clayton Alexander, M D Chicago College of Medicine and Surgery 1907 aged 48 formerly a Fellow of the American Medical Association, of Hope, N D was injured by the overturning of his automobile about 4 miles south of Hope, November 6 and died at his home five hours after the accident

John T Kennedy, M D College of Physicians and Surgeons in the City of New York 1861, aged 75, for nearly half a century a practitioner of New York City, for eighteen years chief surgeon to the New York Hospital, died in his apartments in New York City, November 26, from heart disease

Godfrey J D Hindley University of Oxford, England, 1892, L.R C P, London M R C S, England 1897, aged 43, formerly a practitioner of Carpinteria, Calif, and of Hilo, Hawaii, was lost at sea at the Dardanelles, early in September, by the sinking of a transport on which he was on duty

John Ezra King, M D State University of Iowa, Iowa City 1897, aged 50, formerly a Fellow of the American Medical Association, died at his home in Anamosa, Iowa, from the effects of cyanid of potassium believed to have been self-administered with suicidal intent, while of unsound mind

Arthur Irving McCumber, M D Rush Medical College, 1905, aged 38, of Lewiston, Ill , a patient at the Wilgus Sanitarium, Rockford, on account of nervous breakdown, threw himself under an interurban car about a mile from Rockford, November 20, and was instantly killed

George Moses Hawkins (license Kansas 1901), aged 78, a practitioner since 1857, surgeon of the Tenth Pennsylvania Volunteer Cavalry during the Civil War, formerly a member of the Kansas Medical Society, died at his home in Dexter, Kan , October 2, from cerebral hemorrhage

Samuel Morrow Crawford, M D University of Pennsylvania Philadelphia, 1878 aged 63 a member of the Medical Society of the State of Pennsylvania, for eleven years chief medical inspector of the Pennsylvania System in Harrisburg, Pa , died at his home in that city November 20

William Hambleton Tolson, M D Baltimore University School of Medicine 1890 for several years director of the academic department of the Maryland State Normal School and later principal of No 80 Public School, Baltimore, died at his home in Baltimore, November 24

Cornelius Joseph O'Neil, M D Western Pennsylvania Medical College, Pittsburgh, 1900 aged 40, chief medical examiner in the Pittsburgh Department of Charities and for twelve years school physician, died at his home in Pittsburgh, November 25

William Henry Gesner Griffith, M D Hahnemann Medical College, Philadelphia, 1872, aged 82, assistant surgeon of Volunteers during the Civil War, one of the founders of the McKinley Hospital, died at the home of his son in Trenton, N J, November 24

Daniel Tufte, M D University of King Frederick, Christiania, Norway, 1893, of Pelican Rapids, Minn, who was studying in Germany at the outbreak of the European war and joined the medical staff of the German army, died in Germany, November 10

George Edwin Pinkham, M D Dartmouth Medical School, Hanover, N H, 1863, aged 75, a member of the Massachusetts Medical Society, assistant surgeon of Volunteers during the Civil War, died at his home in Lowell, Mass, November 15

Henry Philips Hirshfield, M D University of Pennsylvania, Philadelphia, 1878, aged 61, a member of the Medical Association of the State of Alabama, coroner of Mobile County for twenty-one years, died in the Inge-Bondurant Sanatorium, Mobile, November 14

George Henry Charles Klie, M D Missouri Medical College, St Louis, 1895, aged 70, a Fellow of the American Medical Association and a well-known practitioner of St Louis, died in the St Louis Mullanphy Hospital, September 24, from carcinoma of the stomach

William A Garner, M D College of Physicians and Surgeons, Keokuk, Ia, 1885, aged 55, a Fellow of the American Medical Association, local surgeon of the Wabash System at Clayton, Ill, died at his home in Clayton, November 14, from organic heart disease

Edward L Stewart, M D Vanderbilt University, Nashville, Tenn, 1891, aged 47, of Tampa, Fla, a specialist on diseases of the eye, ear, nose and throat, formerly health officer of Tampa, is said to have committed suicide in Tampa, November 11

John P Dunnigan, M D Georgetown University, Washington, D C, 1901, aged 41, a Fellow of the American Medical Association and a member of the surgical staff of Providence Hospital, Washington, D C, died in that institution, November 11

Robert Davis Webb, M D Medico-Chirurgical College of Philadelphia, 1893, aged 44, of Philadelphia, died in St. Joseph's Hospital in that city, November 13, from fracture of the skull believed to have been accidentally sustained as the result of a fall

John Calvin Webster, M D Harvard Medical School, 1867, aged 72, a member of the Illinois State Medical Society, a veteran of the Civil War, for forty-eight years a practitioner of Chicago, died at his home in Chicago, November 15

C Anton Holzer, M D University of Strassburg, Germany, 1878, aged 67, a practitioner and pharmacist of Uniontown, Wash, for several terms a member of the city council and mayor for one term, died at his home in Uniontown, November 12

David S Tate, M D Chattanooga, Tenn, Medical College, 1900, aged 50, a well-known practitioner of South Pittsburg, Tenn, died in the Newell Infirmary, Chattanooga, Tenn, October 2, after an operation for disease of the intestines

Isaac Newton Kelly, M D Louisville, Ky, Medical College, 1907, aged 32, formerly a Fellow of the American Medical Association and a physician in the United States Indian Service, died in Garfield, Wash, November 8, from nephritis

Robert A. Chambers, M D Tulane University, New Orleans, 1892, aged 48, for fourteen years a resident of Columbus, Ga, died in the Columbus City Hospital, November 11, from peritonitis following an operation for appendicitis

Adolf Decker, M D University of Wurzburg, Germany, 1881, aged 56, at one time president of the German Medical Association, Chicago, noted as a chess player and composer of chess problems, died at his home in Chicago, November 20

Charles A Fox, M D Medical College of Virginia, Richmond, 1868, aged 72, a Confederate veteran and for fifty-two years a practitioner of Beltsville, Md, died at the home of his daughter in Washington, D C, November 13

John F Kanawel, M D University of Pennsylvania, Philadelphia, 1879, aged 80, a member of the Medical Society of the State of Pennsylvania, died at his home in Penn's Creek, Pa, November 1[illegible], from cerebral hemorrhage

George H Peck, M D Detroit Homeopathic Medical College, Detroit, Mich, 1873, aged 77, for several years health officer of New Philadelphia, O, died at his home in New Philadelphia, November 15, from arteriosclerosis

Robert L Morrison, M D College of Physicians and Surgeons of Kansas City, Kan, 1904, aged 37, a member of the Oklahoma State Medical Association, died at his home in Poteau, November 15, from nephritis

William C Q Wilson, M D Starling Medical College, Columbus, Ohio, 1872, aged 66, formerly a member of the West Virginia State Medical Association, died at his home in Mannington, W Va, November 14

John Hockenhull, M D Medical College of Georgia, Augusta, 1855, aged 83, a Confederate veteran, for many years a practitioner and druggist of Cumming, Ga, died at his home in that place, November 12

Simeon J Zabriskie, M D New York University, New York City, 1856, a member of the Medical Society of the State of New York, died at his home in Westwood, N J, September 11, from senile debility

William C Day, M D Missouri Medical College, St Louis, 1861, aged 78, emeritus professor of obstetrics in the American Medical College, St. Louis, died at his home in White Hall, Ill, November 13

R A Turner (license Texas, 1907), aged 34, of Lovelady, Tex., was found dead in the Cadillac Hotel, November 14, from the effects of chloroform believed to have been accidentally self-administered

Orren Stoddard, M D Medical College of Indiana, Indianapolis, 1886, aged 72, a veteran of the Civil War and for thirty years a practitioner of Merom, Ind., died in Indianapolis, November 12

Philo Anderson Lutz, M D College of Physicians and Surgeons, Baltimore, Md, 1886, aged 55, formerly of Harrisburg, Pa, died at his home in Baltimore, November 12, from heart disease.

Horace Besson Heysham, M D Jefferson Medical College, 1900, aged 42, formerly resident physician to the Charity Hospital, Norristown, Pa, died at his home in Norristown, November 16

Joseph M Craig, M D New Orleans School of Medicine, 1861, aged 84, major surgeon in the Confederate service during the Civil War, died at his home in Amite, La, November 15

William Moor Pulsifer, M D Harvard Medical School, 1886, Hahnemann Medical College, Philadelphia, 1887, aged 52, died at his home in Skowhegan, Me, October 31

William Elvin Pritchard, M D Chicago Homeopathic Medical College, 1886, aged 56, died at his home in Los Angeles, November 14, from cerebral hemorrhage

Joseph D Tuthill, M D Bennett Medical College, Chicago, 1881, aged 87, a practitioner for more than sixty years, died at his home in Chicago, November 26

William C Yolton, M D Western Reserve University, Cleveland, 1887, aged 68, died at his home in Frankfort Springs, Pa, November 12, from pneumonia

Charles C Pierson, M D University of Louisville, Ky, 1907, aged 37, of Kiefer, Okla, died at the home of his mother near New London, Ia, November 15

J M C King (license, Twenty-Seventh Judicial District Board, Texas, 1880), aged 63, died at his home in Merkel, Tex, August 26, from diabetes

Edwin Forrest Philips, M D Jefferson Medical College, 1871, aged 66, died at his home in Tower City, Pa, November 17, from pneumonia

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Robert F Taylor, M D Pulte Medical College, Cincinnati, 1877, aged 66, died at his home in Napa, Calif, November 8

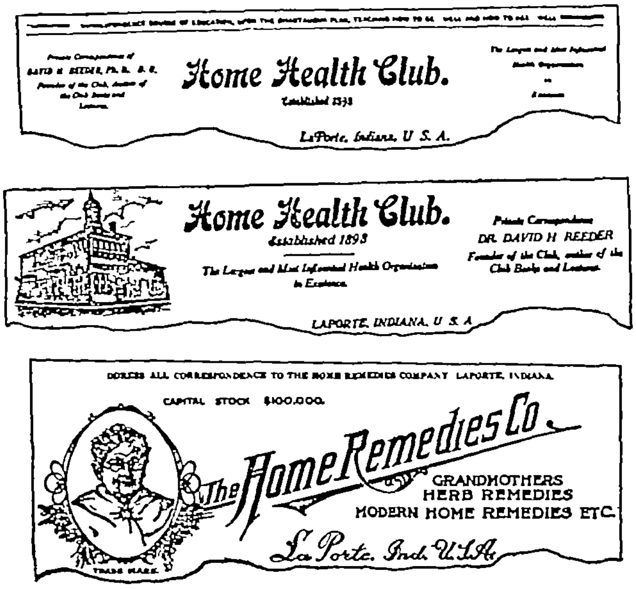
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE HOME HEALTH CLUB

David H Reeder's Ingenious Scheme for Advertising "Patent Medicines"

The medical mail-order faker's most valuable asset is his mailing list and obtaining this list is his greatest item of expense David H Reeder one time of Laporte, Ind, but now of Chicago, has solved the problem in a way which makes up in ingenuity what it lacks in honesty David H Reeder is the president and apparently chief owner, of the Home Remedies Company," originally of Laporte Ind, now at Cottage Grove Avenue, opposite Fiftieth Place, Chicago" The company is a 'patent medicine" concern that sells its remedies on the mail-order plan The Home Health Club" has its headquarters with the Home Remedies Company but advertises its address as "5039 Cottage Grove Avenue, Chicago' The 'founder' of the Home Health Club and the author of the 'Club Books and Lectures is David H Reeder


Private Correspondence of
DAVID H. REEDER, Ph. D., D. O.
Founder of the Club, Author of the Club Books and Lectures
Home Health Club.
Established 1893
The Largest and Most Influential Health Organization in Existence
LaPorte, Indiana, U S. A.
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Private Correspondence
DR. DAVID H REEDER
Founder of the Club, author of the Club Books and Lectures
LAPORTE, INDIANA, U S. A
ADDRESS ALL CORRESPONDENCE TO THE HOME REMEDIES COMPANY LAPORTE, INDIANA
CAPITAL STOCK $100,000.
The Home Remedies Co.
GRANDMOTHERS HERB REMEDIES
MODERN HOME REMEDIES ETC.
La Porte. Ind. U.S.A.
TRADE MARK

Some letterheads of the Home Health Club and the Home Remedies Company when these were operated at Laporte Ind Dr David H Reeder calls himself founder of the 'club and he is president of the patent medicine concern

Reeder[1] poses—in print—as a physician A careful search of all available records, and they are extensive, fails to show that Reeder ever was graduated by a medical college or ever was granted a license to practice medicine by any state In the past, Reeder has not hesitated to put "M D' after his name, more recently he has become wary Volume I of the Home Health Club was written according to the title page, by David H Reeder, M D, Ph D", Volume III of the Home Health Club had for its author, according to the title page David H Reeder, D O., Ph D"

Reeder's business is the selling of (1) alleged health books (with a 'Certificate of Membership' in the Home Health Club thrown in) and (2) "patent medicines,' both on the mail-order plan Reeder has worked out a novel idea for getting his customers He has eliminated the chief item of 'overhead expense' usually inseparable from the mail-order business, that of paying for advertising space His scheme is to write to certain newspapers offering to furnish free "copy" for a "Health Department," to be conducted under the title "Home Health Club" To allay the suspicions that would, naturally, arise in the minds of those editors to whom such an offer came, the Home Health Club explains how it is able to furnish free "copy" for the newspaper It asks that the 'service" offered be given credit to the club "by name and address" Continuing, the letter to the editor says

> 'Through this publicity inquiries are brought directly to the club which promotes the sale of the books compiled and reprinted from the lectures in various papers to which they are furnished These sales amply cover the expenses of the organization which explains how the club is enabled to provide you the matter free."

Notice that no reference is made to the patent medicine" side of the enterprise The sale of books alone is given as the excuse for furnishing free 'lectures"

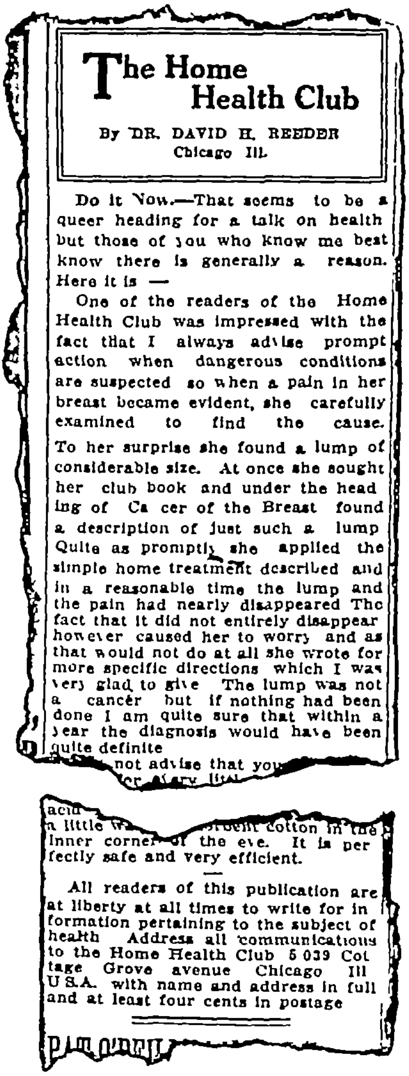
HOW IT WORKS

The way in which Reeder's scheme works out may best be explained by detailing some specific cases A young woman wrote to Reeder giving no details but stating that she was 'weak and run down" and asking for advice Reeder replied in a letter replete with platitudes regarding diet and exercise and suggested that the girl purchase 'Home Health Club Book Vol 1' price $1 and carefully observe the directions given therein For a tonic Reeder recommended Re-New-U' which he declared, is excellent"

> Its influence upon the stomach the liver the bowels and the kidneys as well as heart is the very best and I believe that it will be just the thing for you to take. It is sold under the name of Re New U by the Home Remedies Company at the price of $0 50 per box $2 50 for six boxes.

Enclosed with the letter containing these recommendations was a descriptive price list of the Home Health Club publications The correspondent was told that every purchaser of Volume 1 receives a Certificate of Corresponding Life Membership" The day following the receipt of this letter and advertising brought the young woman a letter from the Home Remedies Company

It is worth noting here, that Reeder carefully avoids letting the public know that there is any connection between the Home Health Club and the Home Remedies Company The Home Health Club's address is always given 5039 Cottage Grove Avenue, Chicago,' while the advertising matter of the Home Remedies Company bears the address 'Cottage Grove Avenue, opp Fiftieth Place.'



The Home Health Club

By DR. DAVID H. REEDER
Chicago Ill.

Do it Now.—That seems to be a queer heading for a talk on health but those of you who know me best know there is generally a reason. Here it is —

One of the readers of the Home Health Club was impressed with the fact that I always advise prompt action when dangerous conditions are suspected so when a pain in her breast became evident, she carefully examined to find the cause.

To her surprise she found a lump of considerable size. At once she sought her club book and under the heading of Ca cer of the Breast found a description of just such a lump Quite as promptly she applied the simple home treatment described and in a reasonable time the lump and the pain had nearly disappeared The fact that it did not entirely disappear however caused her to worry and as that would not do at all she wrote for more specific directions which I was very glad to give The lump was not a cancer but if nothing had been done I am quite sure that within a year the diagnosis would have been quite definite

not advise that you

acid

a little cotton in the inner corner of the eye. It is perfectly safe and very efficient.

All readers of this publication are at liberty at all times to write for information pertaining to the subject of health Address all communications to the Home Health Club 5 039 Cottage Grove avenue Chicago Ill U S.A. with name and address in full and at least four cents in postage

To obtain a sucker list' for his mail order patent medicine business Reeder offers to furnish newspapers with copy for a health department on the understanding that all inquiries are turned over to him Here is a sample of the copy

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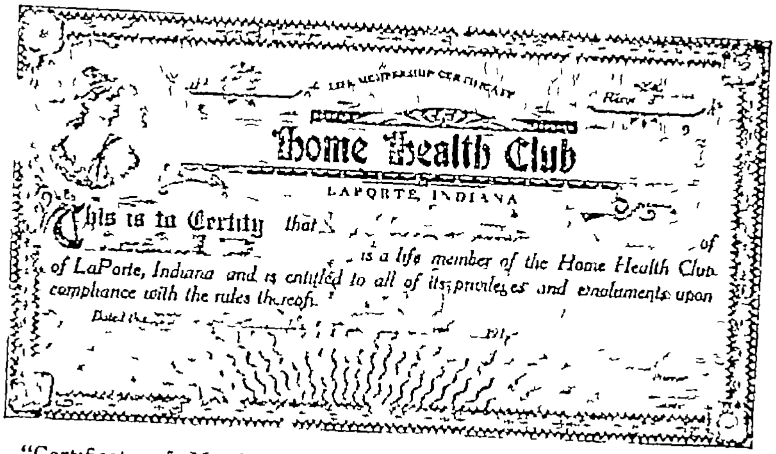
[1] Reeder's connection with the so-called Children's National Tuberculosis Society has been referred to in these pages. A reprint of the matter will be sent on receipt of a two cent stamp

"PATENT MEDICINES" BY THE SCORE

The letter from the Home Remedies Company contained "patent medicine" advertisements galore The first one described, for Abscesses, costs $2 No 4 for "Ataxia Locomotor" costs but 50 cents The eleventh on the list is for Cancer and is priced at $2 The one for Cataract comes at $1, while "Cold Feet" may be cured for 50 cents No 42 for Insanity is another half-dollar preparation while No 52 for Prostatitis costs $3 Then there is "Nocturnia" for "unnatural losses, drains and weaknesses," which "Restores Virility, Strength and Efficiency," price, postage prepaid, only $2 a bottle! And "Grandmother's Pile Cerate" at 50 cents a tube must be considered cheap, as a "relief and cure" of any form of hemorrhoids "Re-New-U" as the company's *piece de résistance,* is, of course, played up to the limit, it will give you "Health, Vigor and Vim" In order that you may *look* as young as "Re-New-U" will make you *feel,* it is recommended that you use "Cutola," "which enables you to defy old age" For Cutola



Life Membership Certificate

No.

Home Health Club

LAPORTE, INDIANA

This is to Certify that ______ of ______ is a life member of the Home Health Club of LaPorte, Indiana and is entitled to all of its privileges and emoluments upon compliance with the rules thereof.

Dated the ______ 191_

"Certificate of Membership' in the Home Health Club, which goes with every purchase of Vol I of the club books—price $1 00

> " would restore freshness and youthful appearance to the face of an old Arizona Indian "

Those who, like Ponce de Leon, are seeking something in this line should send in a "Combination Order 6 Boxes of Re-New-U and 3 Bottles of Cutola, $5"

MAIL-ORDER CURE FOR PILES

Another case A man writes in to Reeder asking him what can be done for a long standing case of hemorrhoids No details are given regarding the case but Reeder comes back with all the glib assurance of ignorance

> "I believe that your case of piles can be entirely cured without having to resort to an operation "

As to the cause of the condition Reeder opines that "the bowels have very much to do with it," which sounds reasonable For treatment

> "You will find in Home Health Club book, Vol 3 much upon
> subject that would enable you, if observed, to successfully treat
> self at home The price of the Vol 3 is $2 00"

Further, Reeder suggests that the gentleman s
from piles "secure and use internally a preparation
toods"

> "The Home Remedies Co , Cottage Grove Ave , Opp 50th
> city handle them under the name of Modern Home Rem
> will ask them to send you some circulars describing them

The vision of Dr Jekyll Reeder of the Home F
asking Mr Hyde Reeder of the Home Remedies
send some advertising circulars to a sufferer fr
rhoids is a touching one But this was not a
recommends also that a 50-cent tube of "Grandmo
Cerate" be purchased This "will aid in putting
under control but in order to gain the best resu
measures are needed" The "further measures" a
"Weirick Rectal Dilators," price $3, sold, of cour
Home Remedies Company

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CURING CANCER WITH "TISSUE SALTS"

But there is a darker side to the Reeder brand of quackery One young woman wrote to Reeder describing a case of carcinoma of the breast Reeder replied

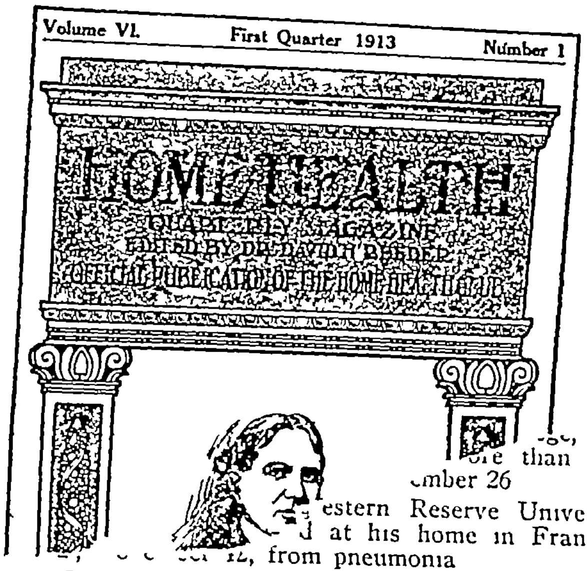
> "From what you mention of your mother's condition I am inclined to think that the trouble may be one of Cancer of the Breast, and although such cases are considered quite severe by many physicians, they are not at all incurable There are many who have been fully restored to health without surgery, just by following the Home Health Club method of treatment, as described in the Volume 2 under the heading, 'Breast Cancer' I will suggest that you procure this book for your mother, and see to that she carries out the different suggestions given therein By so doing I predict good results. The price of the Volume 2 is $3 00 "

For this case Reeder recommended the "tissue remedies" for cancer sold by the Home Remedies Company, price $2, and declared that "Grandmother's Tumor Remedy," also sold by the Home Remedies Company, price $2, was "of great value for external use in cases of this kind" A nice business forsooth

Any man who declares that many women with cancer of the breast have been fully restored to health without surgery falsifies If he does this knowingly, and for the purpose of selling some wretched nostrums, he is a scoundrel, if he falsifies unknowingly, from the depths of abysmal ignorance, he is a dangerous quack

CATCHING THE WOMEN

Much more could be written of the Home Health Club and the Home Remedies Company and other activities of David H Reeder, did space permit It would be interesting, for instance, to describe the devious methods by which the Home


Volume VI.
First Quarter 1913
Number 1
HOME HEALTH
QUARTERLY MAGAZINE
EDITED BY DR. DAVID H. REEDER
OFFICIAL PUBLICATION OF THE HOME HEALTH CLUB

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, from pneumonia

arles C Pierson, M D University of Louisville, Ky , 1907, aged 37, of Kiefer, Okla , died at the home of his mother near New London, Ia , November 15

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After stating that Reeder started in with an original investment of $400 and that the business had been developed until it was worth $126,000, doing a cash business of over $50,000 annually with net profits of 16 per cent., the prospectus declared that the company needed an additional $100,000 "to further advertise and push the sale of our Remedies, Foods, etc" There is the inevitable reference to fortunes made in the "patent medicine" business, and the cases of 'Bromo Seltzer" and 'Warner's Safe Cure" are cited, presumably for the purpose of exciting the cupidity of the prospective investor

THE HOME HEALTH CLUB VOLUMES

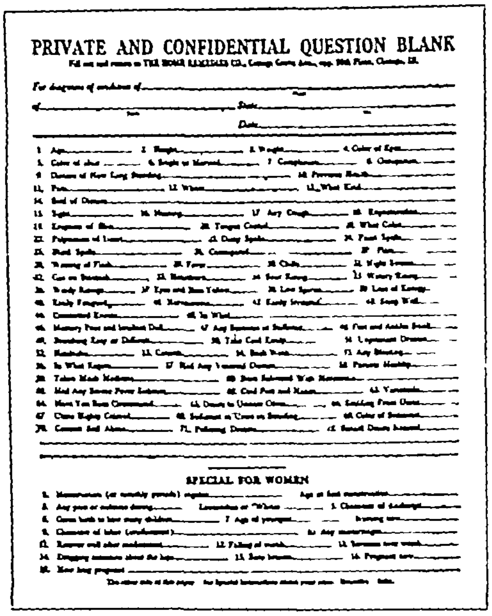
It would be possible to show by quotations from some of the Home Health Club volumes Reeder's ignorance of even the fundamental truths of medical science One quotation must suffice Reeder solemnly assures the public, through one of his books sold as recently as October, 1915, that

> Thirty six cases of diphtheria developed in one school in Chicago by the leakage of sewer gas into a hot air pipe.

In common with his kind Reeder does not omit an opportunity to blackguard the professions of medicine and pharmacy In describing himself and his methods—as a physician, not as a patent medicine' dispenser—he says

> the druggists do not love me the undertaker does not know me, and I miss his influence and my rebate my patients have a quiet time my bills unfortunately are small can t get rich very fas I don t have the advantage of swelling my bill for probate for my patients are never too sick to keep tally on the number of visits

The matter sent out by the Home Health Club, whether it be the so-called Home Health Club volumes, letters of 'advice' *Home Health* the alleged official organ of the Home Health Club or what not, has for its final object the exploitation of the nostrums sold by Reeder under the name of Home Remedies Company The entire business is one of deception misrepresentation and fraud The newspapers are deceived into accepting the Home Health Club copy, the public is deceived by leading it to believe, inferentially, that there is no connection between the 'patent medicine' concern —the Home Remedies Company—and the Home Health Club itself Reeder s writings stand as monuments to his ignorance and his methods indicate a disregard for elementary truthfulness and common honesty



PRIVATE AND CONFIDENTIAL QUESTION BLANK

SPECIAL FOR WOMEN

Every mail-order medical fraud has its diagnosis blank Here is a miniature reproduction of the one used by the Home Remedies Company

The Development of Scientific Medicine—An investigation of medical history shows two developmental periods which interlace with each other to some extent In the early days our ideas of disease and its treatment were quite indefinite and general and were founded in the main on hypotheses and theories which had no particular scientific basis In later years research and experimentation have furnished the scientific basis for the establishment of various facts and for certain seemingly sound theories in addition It is true some of the theories brought forth have been illogical deductions from the facts at hand, others have been formulated as a result of false evidence, improper technic, etc. It is fair to say however that medical theories propounded as the result of scientific research are much safer than those originating in the inner recesses of a dreaming mind It can be said, therefore that the earlier periods of generalization in medicine have passed and we are now working in the age when legitimate progress can only be made as a result of careful research and experimentation—E F McCampbell *Ohio Public Health Journal*

Correspondence

Statistics of Automobile Accidents

To the Editor—Would it not be possible for The Journal to get the facts in regard to automobile casualties in the United States? In view of the fact that your practical system of collecting and tabulating the accident results of the Fourth of July annual observation has aided forcibly in bringing about a change from a dangerous and destructive demonstration to one of sane and safe observance, might it not be possible to the same extent to make the use of the automobile safe and put a stop to the frequent deaths and injuries?

I am convinced that if the daily, or especially the annual loss of life could be ascertained and shown up in as conspicuous a manner as has been done in the Fourth of July casualties, the American people would be appalled

The American public through its legislative bodies, the Interstate Commerce Commission and otherwise, has demanded that the railroads and other public service carriers adopt and use every device and plan for safety, and yet the private citizen, with no consideration of his own or other persons' safety, uses the automobile with its many horse-power engine in a most indifferent and reckless manner

Many of these machines or cars are too often run by individuals of indifferent judgment or physical condition or by youths or others incompetent to insure the safety of their own lives or that of others traveling perhaps by safer methods

If in every case the cause or influence leading to the accident, even in a large percentage of the occurrences, whether causing death or other injury, could be ascertained and shown in a lucid form undoubtedly it would lead to better and safer conditions in handling these engine-driven vehicles Laws and regulations could be urged and enforced, making this mode of travel practically one of safety

If you can do this work you will confer on the traveling public a blessing and aid that will be inestimable

John J Coffman, M.D, Scotland, Pa

Etiology of Pellagra

To the Editor—Your recent editorial on the report of the U S Public Health Service concerning pellagra (The Journal Nov 20, 1915, p 1818) has been read with a great deal of interest, as it recalls to mind an article by Rosenbloom ("The Acetone Bodies in Diabetes Mellitus" The Journal, Nov 13, 1915, p 1715) which seems to have an important bearing on the subject

Rosenbloom states that "in health the catabolism of large quantities of protein can dissipate acidosis on account of its partial conversion into sugar' I take it he means health as distinguished from the diabetic condition

In the editorial on 'Acidosis and the Reaction of the Blood' (Sept 25 1915, p 1114) you state that metabolism in the animal body causes a regular formation of acid bodies which combine with the bases of protoplasm and blood, thus steadily operating to lower the alkaline reaction of the body

This question now presents itself Does not the protein diet which cures pellagra act by dissipating an acidosis (the particular acid bodies not differentiated yet), and may not this acidosis accumulate by *lack* of protein food?

What is acidosis? Is it not loss of reserve alkalinity sufficient to prevent neutralization of the acid bodies, as stated in your September editorial? And if it be admitted, therefore, that deficient alkalinity causes acidosis, and acidosis is dissipated by protein diet, and pellagra is also dissipated by protein diet, may we not with reason propose that pellagra is a condition of deficient alkalinity or lowered alkaline equilibrium between bases and acids?

George D Fairbanks, M D, Brownsville, Texas

Studies of Pellagra a Correction

To the Editor —I have just read the editorial on "Studies of Pellagra" (The Journal, Nov 20, 1915, p 1818) In the second paragraph of the first column I find the following As a result of epidemiologic studies, Goldberger had concluded in effect that pellagra is not a communicable disease, that it is dependent on some as yet undetermined fault in a diet in which the animal or leguminous vegetable component is disproportionately large," etc. This last word "large" is evidently a slip through inadvertence It should be "small," so that the last part of the foregoing quotation should read, "that it is dependent on some as yet undetermined fault in a diet in which the animal or leguminous vegetable component is disproportionately small," etc

Joseph Goldberger, M D, Washington, D C
Surgeon in Charge of Pellagra Investigations

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

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UTILIZABLE ALCOHOL

To the Editor —The amount of alcohol which can be oxidized by the adult human body in twenty four hours, that is, serve as a food, has been determined by a physiologist and formulated into a law Can you inform me concerning the name of the physiologist, and the amount of alcohol that can be utilized?

C C Mechling M D, Pittsburgh

Answer.—The maximal dose of alcohol has been estimated at 15 grams per day Such an amount can be taken without causing the alcohol tension in the blood to become so high that more than the usual amount will be excreted in the kidneys and lungs It has long been known that 90 per cent of the alcohol ingested is burned in the body Atwater and Benedict within the last few years have determined that as much as 99 per cent of the alcohol ingested undergoes combustion in the organism when the amount of alcohol ingested per day is equal in quantity to that contained in 6 ounces of whisky It is well known that alcohol tolerance depends largely on habituation of the individual to this substance In other words, a greater combustion of alcohol occurs in the tissues of a steady drinker than in a habitual abstainer

We are unable to find any reference to the formation of a law for the determination of alcohol utilized in the human body

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TESTS FOR ACETONE IN URINE

To the Editor —Sajous quotes from The Journal regarding tests for acetone in the urine, those of Stock and Deniges I have no description of these tests and would appreciate the information from you

H A. W Brown, Cookstown, Ont

Answer —These tests were described in an article by Dr A E Taylor, "Tests for Acetone in the Urine" (The Journal, March 17, 1906, p 790) The technic is as follows

1 The Stock test The distillate of the urine is used From 50 to 100 c c of urine are made acid by the addition of either acetic, hydrochloric or sulphuric acid The first 10 c c. of distillate will contain all the possible acetone About an inch of the distillate is placed in a test tube, a drop or two of a 10 per cent solution of hydroxylamin hydrochlorid are added, and sufficient sodium hydroxid or carbonate to render the solution alkaline to liberate hydroxylamin, the mixture is shaken and a couple of drops of pyridin are added and the mixture shaken, then an inch of ether is added and the mixture shaken Bromin water is then added drop by drop, with mixing until the ether layer becomes yellow, then a few drops of strong hydrogen peroxid are added, if acetone is present, the ether will turn a distinctive green blue

2 The Deniges test In the test of Deniges about an inch of the distillate in a test tube is mixed with an equal amount of a solution of the subsulphate of mercury (mercuric oxid 50, sulphuric acid 200, water up to 1,000) and the mixture allowed to simmer in a stoppered flask for about five minutes A white crystalline precipitate occurs on cooling, which is very distinctive in appearance If acetone is present in excess, the test is less distinct If but a trace is present, a trace of sodium chlorid will aid the precipitation The precipitate is not soluble in dilute hydrochloric acid

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CHOLOGESTIN AND TABLOGESTIN

To the Editor —Are the enclosed claims of chologestin and tablogestin true? Or shall I try it myself?

Jan Cepelka M D, Chicago

Answer —The "enclosed claims" are the literature issued by F H Strong Company, New York, concerning chologestin and tablogestin Chologestin is said to be a liquid of which 100 c c contains the amorphous sodium salt of glycocholic acid, 0 858 gm, true sodium salicylate from the natural oil of wintergreen, 1 07 gm, pancreatin, 2 15 gm, and sodium bicarbonate 2 15 gm, in a menstruum containing 15 per cent alcohol Each half ounce is said to contain the amorphous sodium salt of glycocholic acid, 2 grains, true sodium salicylate from the natural oil of wintergreen, 2½ grains, pancreatin, 5 grains, and sodium bicarbonate, 5 grains According to the manufacturers, tablogestin is chologestin in tablet form, and three tablets of tablogestin are said to contain the active medicinal ingredients of 1 tablespoonful of chologestin The statement is made

> "Tablogestin (and Chologestin), because of the combined digestive properties of the bile salt and pancreatin, materially aids in the intestinal digestion of the various foods and thus assists in the control of the fermentative and putrefactive changes that might otherwise ensue."

Bile salts do facilitate the action of the pancreatic juice in the intestines, but this applies only to bile salts of endogenous origin, that is, bile that is secreted in correlation with pancreatic secretion It is doubtful if the pancreatin used in this mixture could ever enter into a digestion process in the intestine As a consequence of the cholagogue action it might be admitted that it has an indirect influence on digestion in the intestine, this would, however, be offset by its disturbing influence on the digestive process in the stomach, as it is known that bile salts precipitate pepsin

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ARTICLES ON LEUKEMIA

To the Editor —Please give me the more important references in the literature on leukemias in general more particularly acute leukemia

C R Bird M D, Greensburg Ind

Answer —The following is a partial list of articles published during the past two years

Billings F Benzol in Treatment of Leukemia, The Journal, Feb 15 1913, p 495
Warthin, A S Minute Changes Produced in Leukemic Tissues by Exposure to Roentgen Rays *Am Jour Med Sc*, January, 1914 abstr The Journal Jan 31, 1914 p 407
Smith, F H Benzol Treatment in Two Cases of Leukemia, The Journal March 21 1914, p 921
Non Formation in Leukemia of Agglutinins for Typhoid Bacilli Current Comment, The Journal April 18, 1914, p 1259
Brown E J Acute Lymphatic Leukemia after Tetanus Serum Anaphylaxis, The Journal May 9 1914, p 1473
Pulawski, A. Roentgen Rays and Benzol in Leukemia, *Wien klin Wchnschr* May 7, 1914, abstr, The Journal June 13, 1914, p 1935
Sappington S W, and Pearson W A Leukemias Under Benzol, The Journal July 11 1914 p 143
Kiralyfi G Intramuscular Injections of Blood in Treatment of Leukemia, *Wien klin Wchnschr* July 30, 1914, abstr, The Journal Sept 26, 1914 p 1143
Graham C F Case of Splenomyelogenous Leukemia Treated with Benzol The Journal Feb 6, 1915 p 505
Simon C. E and Judd C C W Acute Lymphatic Leukemia, The Journal May 15, 1915, p 1630
Smith F H Benzol in Leukemia, The Journal May 22, 1915, p 1734
Beifeld A F Case of Acute Myeloid Leukemia, *Arch Diagnosis* July, 1915
Boardman W W Benzene Treatment of Leukemia, *California State Jour Med* September 1915
Ireland R A and Ruhrah J A Case of Lymphatic Leukemia with Apparent Cure The Journal Sept 11, 1915 p 948
Steinke, C R Leukemia Report of Two Cases, The Journal, Sept 11, 1915, p 954
Leukemia, Therapeutics, The Journal, Oct. 9, 1915, p 12[illegible]0

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama Montgomery, Jan 11 1916 Sec., Dr W H Sanders, Montgomery

Alaska Juneau, Jan 4, 1916 Sec, Dr Harry C. DeVighne Juneau

Arizona Phoenix Jan 4-5 1916 Sec., Dr John Wix Thomas National Bank of Arizona Bldg Phoenix

California Los Angeles December 14 and Sacramento Jan 11 1916 Sec, Dr Charles B Pinkham Room 527 Forum Bldg Sacramento

Colorado Denver Jan 4, 1916 Sec., Dr David A Strickler, 612 Empire Bldg, Denver

Delaware Dover and Wilmington December 14 Sec, Dr H W Briggs 1026 Jackson St. Wilmington.

District of Columbia Washington Jan 10, 1916 Sec, Dr Edgar P Copeland The Rockingham Washington

Indiana Indianapolis Jan 10 1916 Sec. Dr W T Gott 84 State House Indianapolis.

Maryland Regular, Baltimore December 14 Sec Dr J McP Scott Hagerstown. Homeopathic Baltimore December 15 16 Sec, Dr O N Duvall 1817 N Fulton Ave Baltimore

Minnesota Minneapolis Jan. 4 7, 1916 Sec Dr Thomas S McDavitt 814 Lowry Bldg St. Paul

Missouri St. Louis December 13 15 Sec. Dr J A. B Adcock State House Jefferson City

New Hampshire Concord December 20-21 Sec., Dr W T Crosby The Beacon Manchester

New Mexico Santa Fe, Jan 10, 1916 Sec, Dr W E. Kaser East Las Vegas.

North Dakota Grand Forks, Jan. 4 7, 1916 Sec Dr G M Williamson Grand Forks.

Oklahoma Oklahoma City Jan 11 12 1916 Sec Dr R. V Smith 502 Daniel Bldg Tulsa

Oregon Portland Jan. 4 1916 Sec. Dr L. H Hamilton Medical Bldg Portland.

Pennsylvania Philadelphia Jan. 18 20 1916 Sec. Mr Nathan C Schaeffer Harrisburg

Rhode Island Providence Jan 6-7 1916 Sec Dr Gardner T Swarts Providence

South Dakota Pierre Jan 11 1916 Sec. Dr P B Jenkins Waubay

Utah Salt Lake City Jan 3 1916 Sec Dr G F Harding 407 Templeton Bldg Salt Lake City

Virginia Richmond December 14 17 Sec., Dr J N Barney Fredericksburg

Washington Walla Walla, Jan 4 1916 Sec. C. N Suttner Baker Bldg Walla Walla

Wisconsin Madison Jan. 11 1916 Sec. Dr J M Dodd 220 E Second St., Ashland.

California June Report

Dr Charles B Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at San Francisco June 15-18, 1915 The total number of subjects examined in was 9, total number of questions asked, 90, percentage required to pass 75 The total number of candidates examined was 37 including 2 osteopaths, of whom 35 passed and 2 osteopaths failed. Seven candidates were licensed through reciprocity The following colleges were represented

College PASSED	Year Grad	Per Cent.
College of Physicians and Surgeons Los Angeles	(1914)	81.6
Hahnemann Med Coll of the Pacific	(1915)	75.1 82, 84.2 86.5
Leland Stanford Junior University	(1915)	79.5 81.4 82.2 82.3 82.7, 83 85.2 88.1 88.3 90.9 91.3, 91.3, 91.5 93.9
Oakland College of Medicine and Surgery	(1915)	90
University of California	(1915)	84.7 84.9 88.2 89.3 90.7 90.9 92.8 93.3 93.4 94.3 94.8
Denver and Gross College of Medicine	(1904)	96.3
Jenner Medical College	(1901)	83.8
Harvard University	(1915)	88.3
Jefferson Medical College	(1911)	81.8

College LICENSED THROUGH RECIPROCITY	Year Grad	Reciprocity with
Northwestern University	(1894) (1899)	Minnesota
Rush Medical College	(1891)	Minnesota
State University of Iowa College of Medicine	(1898)	Minnesota
College of Phys. and Surgs. Kansas City Kan	(1898)	Missouri
University of Louisville	(1872)	Missouri
University of Michigan Medical School	(1891)	Minnesota

The following questions were asked

PHYSIOLOGY

1 (*a*) Discuss hemolysis. (*b*) Discuss the origin and fate of the leukocytes 2 What is the relation of the nerves to the movements of the intestines? 3 Discuss the influence of the nervous system on respiration. 4 Define the following terms inhibition, diffusion osmosis diapedesis perimetry 5 Discuss the metabolism of the embryo 6 Discuss color blindness. 7 Discuss inhibition in reflex action 8 Discuss the relation of the rods and cones to vision. 9 Discuss the variations in the volume of the brain due to respiration. 10 Discuss the sensation of hunger and thirst. 11 (*a*) What are the sources of uric acid? (*b*) Where and how is uric acid formed? 12 What effects are observed after section of a cutaneous nerve?

OBSTETRICS AND GYNECOLOGY

1 What is a blue baby? Give pathology and treatment of the condition 2 Ophthalmia neonatorum Give etiology pathology and treatment 3 (*a*) What are the indications for the use of forceps? (*b*) for cesarean section? 4 Diagnose tubal pregnancy before rupture. 5 Describe the mechanism of labor with a left mento *anterior position* 6 Differentiate polyhydramnios from twin pregnancy 7 Name the ligaments of the uterus and *give the origin* and insertion of each 8 Define and give etiology and pathology of cystocele, rectocele, hematocele and procidentia. 9 Describe an operation for complete laceration of the perineum 10 Give diagnosis and treatment of pelvic abscess. 11 Give cause symptoms and treatment of subinvolution of the uterus. 12 Erosion of the cervix Give cause and treatment

GENERAL MEDICINE

1 Typhoid fever (*a*) etiology (*b*) symptomatology, (*c*) pathology (*d*) diagnosis. 2 In a case of general anasarca how would you proceed to determine the underlying cause. 3 What are the early signs of tuberculosis both subjective and objective? (*b*) Describe two important tests for tuberculosis and give relative value. 4 (*a*) Differentiate acute cerebrospinal meningitis and acute anterior poliomyelitis (*b*) Give treatment of the latter 5 (*a*) Describe and give management of a case of persistent gastro enteritis in an infant on artificial diet. 6. Give ten causes of headache and indicate location of pain in each variety 7 Give a brief discussion of epilepsy and give general advice to such patient. 8 What is the significance of a blood pressure of 240 in a woman 60 years of age? 9 Give symptoms and treatment of chlorosis 10 Discuss the various types of asthma from etiologic standpoint, and give general management of one type. 11 Discuss the complications and sequelae of scarlet fever 12 What is the usual type of pneumonia in the child in the adult in the aged? (*b*) Give description and treatment of one type of pneumonia.

ANATOMY AND HISTOLOGY

1 Give formation and branches of the lumbar and sacral plexuses. (May use diagram) 2 (*a*) Classify articulations give a typical example of each class (*b*) Discuss the hip joint naming all muscles passing across the joint 3 Discuss the distribution and central connections of the auditory (eighth cranial) nerve. 4 Discuss the bony thorax 5 Discuss the pleura, giving attachments and reflections, also external *markings of its boundaries.* 6 *Give the action of* (*a*) *the sternocleido* mastoid singly and together (*b*) the psoas magnus (*c*) serratus anterior (*d*) deltoid (*e*) trapezius (*f*) iliocostalis (*g*) latissimus dorsi 7 Describe by diagram the longitudinal section of the femur showing outline and histologic structure showing normal development and regeneration 8 Give the essential differences of the appearance and structure—gross and microscopic—of the mucous membrane of the duodenum jejunum and ileum 9 Give the histology *of a medium* size artery 10 Give formation of the tributaries of the portal vein give most inferior tributary 11 Discuss the cervical sympathetic ganglia give location tributaries and branches. 12 Give histology of the mammary gland *make drawing showing typical histologic section*

HYGIENE AND SANITATION

1 Indicate the limitations of private practice as compared with public health practice 2 (*a*) What are the most important foreign ingredients in water? (*b*) Mention five methods of purifying water 3 (*a*) What prevalent acquired defect in schoolchildren's eyes is directly due to school life? (*b*) Discuss the prophylaxis of eye defects 4 Why should the registration of vital statistics be compulsory? 5 In what ways are health and efficiency of schoolchildren prompted by frequent physical examinations? 6 Describe the modern method of dealing with an epidemic of diphtheria among schoolchildren 7 What diseases are transmitted by *animals* and insects? 8 Discuss antityphoid inoculation 9 Name ten preventable diseases and indicate the mode of prevention 10 Discuss modes of dissemination of diseases which can be transmitted by indirect contact. 11 Discuss the efficiency of formaldehyd as a disinfectant Describe most efficient method of using it 12 Describe an efficient method of disinfecting excreta

SURGERY

1 (*a*) What conditions will *cause bleeding from the* stomach? (*b*) State briefly etiology symptomatology clinical and laboratory findings and prognosis of gastric ulcer 2 What symptoms and signs would result from fracture of the skull over the right rolandic area? 3 State briefly the general considerations in the treatment of gunshot wounds. 4 (*a*) Name the different varieties of goiter (*b*) When is removal of the thyroid gland indicated? (*c*) When is the ligation operation indicated? (*d*) When is no surgical interference indicated? 5 (*a*) Diagnose posterior dislocation of hip (*b*) Describe briefly the necessary manipulations to reduce said dislocation What is the after treatment? 6 Describe the operation and name structures encountered in ligation of the superficial femoral artery at the apex of Scarpa's triangle. 7 (*a*) Describe the operation *of removal of* the appendix (*b*) What are the indications for said operation? 8 (*a*) Describe the symptoms and signs of oblique fracture of head of humerus. (*b*) Describe briefly the treatment 9 Describe briefly a typical case of acute empyema giving all aids to diagnosis of said condition. 10 Give the diagnosis course and prognosis of cancer of the rectum 11 Describe the treatment of acute gonorrhea in the male 12 Differentiate gallstones from right sided kidney stones.

CHEMISTRY AND TOXICOLOGY

1 Name and give the formulas for five salts of *mercury* 2 What is the *formula* of hydrogen peroxid? What is its action on silver oxid on finely divided platinum? 3 What is bleaching powder its formula? How does it act as a disinfectant? 4 Define and discuss diffusion and osmosis. 5 Describe and discuss briefly HNO_3 its

chemical and physical properties 6 Discuss arsenic (its occurrence, properties and toxic effects, and describe the use of one antidote) 7 Discuss lead poisoning and two effective means of overcoming the same 8 Define "physiologic antidote" and "chemical antidote" and give an example of each 9 Discuss hydrargyrism 10 Discuss the indications and contraindications for the use of stomach pump 11 Discuss carbolic acid poisoning and an efficient method of treatment 12 Discuss the toxic effects of yellow phosphorus

BACTERIOLOGY AND PATHOLOGY

1 What changes are found in a stained blood smear in primary pernicious anemia? 2 What elements might you find microscopically in the sediment of a normal urine? 3 Describe the microscopic field seen in (*a*) a negative Widal reaction, (*b*) a positive Widal reaction 4 What do you look for in a microscopic examination of stomach contents? 5 Define eosinophilia, name several conditions 6 What are casts? Describe at least three varieties, and tell under what diseased conditions they are found 7 Discuss briefly the etiology of chronic interstitial hepatitis, or cirrhosis of the liver, and describe the microscopic appearance of at least two varieties 8 Describe embolism, infarction and thrombosis, and briefly discuss the pathology of each 9 Define (*a*) carcinoma, (*b*) sarcoma. Give the relative frequency of occurrence in the (*a*) breast, (*b*) liver (*c*) bone 10 Describe the gross appearance of a bone at the site of osteomyelitis 11 What are the causes of jaundice and how do *they* operate to produce this condition? 12 Define (*a*) cloudy swelling, (*b*) atrophy, (*c*) malignancy

MATERIA MEDICA AND THERAPEUTICS, PHARMACOLOGY, INCLUDING PRESCRIPTION WRITING

1 Name four commonly used mercury compounds (U S P) and discuss briefly their therapeutic uses 2 Discuss fully the possible therapeutic effects that would be expected of the following prescription ℞ Tinct nucis vomicae, 5 0, fluidextracti cascarae, 10 0, tinct cardamon comp, 25 0, tinct gentian comp, q s ad 100 0 M Sig Take one teaspoonful in half glass of water t i d, before meals 3 What is apomorphin? State dosage, indications, modes of administration and action 4 Discuss the indications and contraindications for the use of the following ℞ Kalii iodidi, 18 0, aquae dest., 60 0, syrup sarsaparilla comp, q s ad 125 0 M Sig Take one teaspoonful, well diluted t i d, p c 5 Describe and discuss three different modes of administering drugs for therapeutic purposes 6 Discuss the conditions that modify the effects of drugs 7 (*a*) Discuss the dosage of drugs as influenced by age, sex, size and weight of the individual (*b*) Define idiosyncrasy and discuss one example 8 (*a*) Discuss oleum ricini its dosage, therapeutic action and indications (*b*) Discuss three contraindications for the use of intestinal evacuants 9 Discuss the systemic action of alcohol (internally administered) 10 What is epinephrin? How is it administered? What are its principal effects? 11 Discuss salvarsan (its principal properties, dosage, best mode of administration, indications and contraindications) 12 Describe the bromid salt most commonly used (as to its physical properties, dosage, therapeutic action and untoward effects)

Indiana July Report

Dr W T Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, July 13-15, 1915 The total number of subjects examined in was 16, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 43, of whom 10 passed, including 2 osteopaths, and 3 failed Twenty-seven candidates were licensed through reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Howard University	(1914)	89 8
Dunham Medical College	(1902)	81 8
Northwestern University	(1915)	90 9
Rush Medical College	(1915)	89 3
Indiana University	(1915)	82 6, 82 6, 85, 85 6, 86 3, 86 4, 86 5, 87 1, 87 3, 87 3, 87 5, 87 5, 87 6, 87 7, 87 9, 88 1, 89, 89 3 90 3, 90 4, 90 5, 92 7, 92 8, 93 7, 94 1, 94 7
University of Louisville	(1915)	83 9, 84 7 84 7, 87 6
Harvard University	(1915)	89 8
University of Michigan Medical School	(1915)	93 1
Western Reserve University	(1915)	91 6
Jefferson Medical College	(1912)	89 4
FAILED		
University of Illinois	(1915)	*
University of Toronto	(1906)	87 5†
National School of Medicine Mexico	(1912)	73 2

College	Year Grad	Reciprocity with
LICENSED THROUGH RECIPROCITY		
College of Physicians and Surgeons, Chicago	(1912)	Illinois
Chicago College of Med and Surg	(1910) (1913, 2)	Illinois
Hahnemann Med Coll and Hosp, Chicago	(1901) (1910)	Illinois
Northwestern University	(1901)	Illinois
Rush Medical College	(1912)	Illinois
University of Illinois	(1913 2)	Illinois, Missouri
University of Louisville	(1894) (1914)	Kentucky,
	(1914)	Michigan
Johns Hopkins University	(1902)	Maryland
University of Maryland	(1912)	Maryland
Harvard University	(1893)	Nebraska
Detroit College of Medicine and Surgery	(1914)	Michigan
University of Michigan Medical School	(1902)	New York
Missouri Medical College	(1887)	Missouri
St Louis University	(1913)	Missouri
University Medical College, Kansas City	(1911)	Missouri
Medical College of Ohio	(1875)	Ohio
Ohio State University, College of Medicine	(1914)	Ohio
Western Reserve University	(1911)	Ohio
Medico-Chirurgical College of Philadelphia	(1913)	Penna
Western Pennsylvania Medical College	(1897)	Penna.
Meharry Medical College	(1906)	Tennessee

* Examination incomplete.

† Fell below the required average in one subject.

Book Notices

Diseases of Nutrition and Infant Feeding By John Lovett Morse A M, M D, Professor of Pediatrics, Harvard Medical School, and Fritz B Talbot, A B, M D Instructor in Pediatrics, Harvard Medical School Cloth Price, $2 50 Pp 346 New York The Macmillan Company, 1915

The first part of this book contains chapters on the physiology of digestion, and the metabolism of the various food elements—the fundamentals, the proper foundation and introduction to the main part of the work, which is a clinical and practical discussion of infant feeding

The laboratory worker will find in the early chapters a resume of the latest views on the metabolism of early life with full reference to the work which has been done in this direction That work has been carefully sifted, and critically analyzed It is refreshing to come across such a sentence as this "It seems wise to summarize what we *think* we know about the digestion and absorption of fat" This candor and frank acknowledgment of our limitations is characteristic of the book repeatedly one reads, "but this is not proved," following the statement or description of a well-established clinical observation

Pediatricians and general practitioners will find in the work much of practical value, much knowledge and detailed information which they can apply in their everyday practice Breast feeding and artificial feeding are carefully discussed and many valuable hints given as to the management of difficult cases, the ideas set forth being in the main rational and common sense, yet "scientific" in that they are based on, and are the logical outgrowth of, facts in metabolism stated in the earlier chapters of the book This correlation or "team play" between the different parts of the work, again, is one of its characteristics

The subject of breast feeding receives the attention which its importance demands, fifty-five of the 336 pages being devoted to it Directions as to the management both of the baby and the mother's diet and daily hygiene are given in detail The more complicated subject of artificial feeding is next taken up and, cow's milk being the basis of all substitute foods, discussion of its qualities and characteristics forms the introduction to this general subject A helpful and practical part in this discussion is a description of certified milk with detailed directions as to the management of a dairy aiming to produce certified or clean milk

The opening paragraph of the chapter on general principles of artificial feeding strikes the keynote of the authors' views on the feeding of babies

> "In approaching the subject of artificial feeding it must be remembered that there are only a few food elements A baby's food may contain all of these elements, it must contain some of them it cannot contain any other elements These food elements are carbohydrates, protein and salts The carbohydrates comprise the sugars and starches"

The authors are careful to point out that expression of amounts in percentages is a method of calculation and not a method of feeding, and insist on the necessity of accuracy in our knowledge of what we are feeding our babies The misconceptions and erroneous ideas concerning this method of calculation are cleared away, and its ease and simplicity are clearly evident on study of this particular part of the book The absence of complicated algebraic formulas is refreshing The method of calculating the caloric value of the baby's twenty-four-hour amount of food is also given its just weight and importance It would have been simpler, however, had the authors used the metric system throughout in these calculations They do use it in estimating the caloric needs of premature infants, why not of older babies also?

The chapters on the problems of infant feeding will be found invaluable to those conscientious physicians who wish to practice careful and efficient methods of feeding, to know what they are doing and thereby to save life

As is to be expected in such a book of today, in the treatment of the digestive disturbances of infancy, stress is laid almost exclusively on the diet, medicine playing but little part in their proper management

While this work is by no means perfect, it is one of the best and most complete expositions of the difficult subject of infant feeding which have yet been contributed to medical literature in any language It is no exaggeration to say that if the principles as expressed in this book would be taken to heart by the great body of general practitioners to whose hands after all is entrusted the feeding of the vast majority of the nation's babies, and applied diligently, intelligently and conscientiously by them to the management of the most helpless of their patients, the shamefully high infant mortality which characterizes our own as well as other countries would be materially diminished That after all, is the object of all such work in our profession, the saving of life.

The Practitioner s Visiting List 1916 Leather Price $1 25 net Philadelphia Lea & Febiger 1915

The Medical Record Visiting List or Physician s Diary for 1916 Leather Price $1 50 New York William Wood & Co 1915

The Physician s Visiting List (Lindsay and Blakiston s) for 1916 Sixty Fifth Year of Publication. Leather *Price $1 25 Philadelphia* P Blakiston s Son & Co 1915

Among the various books peculiar to the holiday season are the annual visiting and record lists These have been offered to physicians over a sufficiently long period for their make-up to have assumed a standard form They vary however in the arrangement of the pages and in the subsidiary contents

In the "Practitioner's Visiting List" are information on the periods of dentition directions for estimating the day of confinement tables and comparative scales of weights and measures an article on the examination of the urine a list of incompatibles an article on artificial respiration tables of eruptive fevers of poisons and antidotes, of dosages and of therapeutic reminders, and an article on the ligations of arteries The book, which is for thirty patients per week, contains 192 pages which are numbered and a table of contents It is attractively bound in red leather Separate departments are devoted to general memoranda obstetric engagements, vaccinations death registry addresses of patients and nurses and a cash account. The book has a pocket for notes, and a place *for the insertion of a pencil*

In the 'Medical Record Visiting List" are a table of approximate equivalents an obstetric calendar, tables of weights and measures of dosage, and of drops and solutions for subcutaneous injections a few short miscellaneous facts a table of poisons and antidotes, miscellaneous emergency treatments articles on artificial respiration and signs of death and hints on the writing of wills The book, which is marked for sixty patients has approximately 150 pages with separate departments devoted to the daily record special memoranda consultations obstetric practice, vaccinations, deaths addresses of nurses and patients and cash account The book is attractively bound in black leather, and contains a pocket for notes and a pencil

In the 'Physician's Visiting List" are a table for calculating the day of confinement a table of contents, a table of incompatibilities poisons and their antidotes, an article on the metric system a table for converting apothecaries' weights and measures into metric a table of doses and of quarantine periods in infectious diseases an article on asphyxia, and a comparison of thermometric scales The record pages are not numbered The book, which is marked for twenty-five patients, contains approximately 100 pages, and is attractively bound in smooth black leather, with a well-fitting leather flap It has a pocket for notes and a pencil.

From this resume of contents, the relative advantages of the various lists may be estimated.

Miscellany

Pulmonary Diseases Among Miners

There has been apparently an unusual prevalence of pulmonary tuberculosis and a high death rate from it among the metal miners in southwestern Missouri This condition has attracted considerable attention and has caused some alarm in that part of the country To determine the facts in relation to this condition, the U S Bureau of Mines instituted an investigation of pulmonary diseases among miners in the Joplin district and its relation to rock dust in the mines

In Technical Paper 105, A J Lanza and Edwin Higgins make a preliminary report of their investigations The general opinion in this region was that lung diseases became more prevalent after the beginning of active mining in what is known as the sheet ground mines, and that the flint dust from drilling and other mine operations was directly responsible

The records of the State Board of Health of Missouri for 1912 show 180 deaths from pulmonary tuberculosis in Jasper County where these metal mines are located From the Jasper County Antituberculosis Society records, however, it was learned that during the same year there were 720 deaths among miners who had worked two or more years underground Not more than twelve of these deaths were from pneumonia, which was in some cases a terminal infection of tuberculous subjects Not all of these deaths occurred in Jasper County however but some occurred in adjoining counties in Missouri and others in Kansas This accounts for a considerable difference between the figures of the state board of health and those of the antituberculosis society

Some interesting comparative figures are brought out with reference to the death rate in the metal mining counties and in other counties and cities in Missouri The death rate in 1911 from pulmonary tuberculosis in Jasper County, where the zinc mines are located was 14 08 per cent of the total deaths in 1912 15 1 per cent , in 1913 15 5 per cent. In St. Francois County which is the lead mining district the percentage for 1911 was 11 8 1912 11 6, 1913 13 1 In Greene County which includes Springfield in Jackson County which includes Kansas City and in St Louis not mining districts, the percentages for 1911 were, respectively 9.27 9 33 and 8 75 In 1912 in the same counties and cities the percentages were 9 46 9 07 and 8 93 and for 1913 the figures were 7 4 8 8 and 9 1 It will be seen that in the two metal mining counties the deaths from tuberculosis exceeded those in the other counties and cities by considerable percentages

These figures have been taken into consideration by industrial insurance companies doing business in the metal mining counties One company required that all applicants for industrial insurance over 10 years of age must be examined as for ordinary insurance This rule is in operation in only one or two other districts and is said to be occasioned by the number of death claims on account of pulmonary tuberculosis Another industrial insurance company doing a large business among miners and their families estimates that at least 90 per cent. of rejections and 75 per cent of death claims are due to pulmonary tuberculosis

In determining the effect of mining conditions in producing this higher death rate, the investigators studied the methods of mining with reference to drilling, blasting shoveling housing ventilation, temperature mine water and rock dust besides some other collateral subjects with reference to the personal hygiene and personal habits of the miners

Although the mine operators have succeeded for the past two years in making many substantial improvements in working conditions underground, and state mine inspectors have given the subject attention, there is still room for improvement in the working conditions of the mines which the investigators believe to be the chief source of the lowered state of health which results in the large incidence of tuberculosis Rock dust is the chief vehicle of harm, done directly to the lungs by reason of the hard sharp comparatively large flin y particles of which it is composed This dust is made by the drilling and blowing out of dry holes, by "squibbing," which means the blasting in holes in which the drill becomes blocked, and by the blasting of large boulders in the chambers of the mine, as well as from shoveling and dumping the ore

The mine workings in sheet ground mines constitute practically one large open chamber which allows the dust to disseminate Although the amount of dust in the air is not, comparatively, large, practically every man underground is exposed to the dusty atmosphere during his entire shift This dust, it is believed, could be largely prevented, and two methods are mentioned the use of some type of drill that provides for water passing through the core of the drill steel into the drill hole, and the spraying of the drill holes, ore faces and broken rock by means of a hose to which a nozzle is attached A separate water line should be laid to every working face None of the mines are yet fully equipped with water drills Strict rules should be enforced against squibbing and boulder blowing while the shift is underground, and against the blowing of drill holes at all times Ventilation should be improved by the opening of new shafts whenever practicable By way of legislative provisions it is recommended that state mine inspectors should be empowered to decide what constitutes a dusty mine, and that operators should be compelled to run a water line to each working face Every miner should be compelled to use the water Breaking boulders by means of powder or dynamite should be prohibited, except when the shift has left the mine Blowing of drill holes without first wetting them should also be prohibited

It is believed, further, that a workman's compensation act would go far toward improving safety and sanitary conditions in the mines of the Joplin district

The Larger Relations of the Hospital

The final test of a hospital's efficiency, according to R M Bradley (*Modern Hospital*), is not merely the treatment which it accords to the patients which it receives but also the impression which it makes on the whole sum of sickness in the community He summarizes the results of a canvass of two districts in New York, with a view to ascertaining this point

It appeared that, in a total population of 17,000, 86 6 per cent of the cases of sickness were cared for at home and not at the hospital, and that 75 per cent of the typhoid deaths and 80 per cent of the pneumonia deaths occurred at the home Why were these desperate cases not cared for by the hospital? Another canvass to ascertain the hospital needs was made of all ascertainable cases of sickness in a central New York district with about 10,000 inhabitants The number of beds needed was figured out, but analysis of the causes of illness sadly disarranged the beautiful estimate For instance, the figures called for accommodations for many typhoid patients, but reflection suggested a few drainpipes as "a more radical and less expensive remedy for that particular ill" Certain unfortunate girls had no place where they could receive proper care during confinement, but would it not be better to place such helpless and feebleminded creatures under permanent custody than to aid them in producing offspring like themselves? The dwellings of many families were no better as places to live in than to be sick or die in "Was the remedy better housing or more hospital beds?"

Bradley suggests that in future hospital planning will be carried out in connection with a social survey that will take account of the main sources of preventable illness While, on the one hand, hospital provision must tend to increase as the people learn reliance on hospitals in proper cases, on the other hand it should tend to decrease with the application of methods of disease prevention and a system of home care that will prevent hospitals from being overloaded with the less urgent cases Bradley indicates a method of tabulation intended to bring out how far the hospital is meeting the demands of the highest social efficiency For such a purpose cases might be classified as (1) real hospital cases (cases in which the patients cannot without undue trouble and expense or danger to the community be cared for outside of the hospital), (2) cases in which home care or nursing is defective, and (3) cases in which the patient has no home He also suggests that account be taken of the days during which convalescent patients have to be retained in hospital (thus crowding out more urgent cases) because there is no suitable place for them elsewhere A system is needed which will coordinate the hospital with other social agencies

Medicolegal

Liability of Associate Surgeon for Leaving of Sponge in Wound

(Walker vs Holbrook (Minn), 153 N W R 305)

The Supreme Court of Minnesota affirms a judgment for $1,000 damages against the defendant for alleged malpractice in the leaving of a piece of gauze or sponge in the body of the plaintiff in an operation for appendicitis and other troubles The court says that one of the incisions never healed, but the presence of foreign matter, though the wound was inspected, was not demonstrated until parts of the gauze began to come from the wound It was in the plaintiff's body nearly a year The first contention of the defendant was that there was no contractual relation between him and the plaintiff, and the evidence relating to his employment was somewhat unsatisfactory It was, however, sufficient to present the issue to the jury which could properly find that the defendant was employed by the other surgeon acting on the suggestion of the plaintiff If this was true, he owed the plaintiff the duty of exercising reasonable care and skill, and the question as to whether or not he performed that duty was for the jury The defendant's second contention was that he was not in charge of the operation, but was merely an assistant of the other or operating surgeon, and merely did the things which he was told to do, and that consequently the negligence or want of care, if any, was that of the other surgeon, who had died The evidence was conflicting as to whether or not the defendant was employed by the other surgeon on his own motion or at the suggestion of the plaintiff Whether or not the defendant was merely an assistant to the other surgeon, employed by him on his own initiative, doing the things that he was told to do, so as to free him from any charge of negligence, was, under the evidence, a question for the jury There was evidence tending to show that the defendant actively participated in the operation, that he consulted with the operating surgeon, that he assisted in sewing up the wounds, and that he handled the instruments and did other things, from which, if the jury believed the testimony, they could find that he was performing the operation jointly with the other surgeon The theory on which the action was tried and submitted to the jury was that the plaintiff was injured by the failure of the defendant to exercise reasonable care and skill, a duty resting on the defendant under the circumstances The trial court properly submitted the case on this theory The defendant, whether at the invitation of the plaintiff or of the other surgeon, associated himself with the latter and took an active part in the operation In thus undertaking to act, he owed to the plaintiff the duty of performing the operation with the reasonable care and skill which ordinary surgeons use under such circumstances It was not charged that there was any lack of skill The evidence all pointed to want of care The law requires reasonable care But this care must be proportionate to the risks to be apprehended and guarded against The degree of care must be commensurate with the circumstances under which the transaction is had, the seriousness of the undertaking, and the dangers to be anticipated Reasonable care may thus under certain circumstances be the highest degree of care A third contention of the defendant was that a certain custom obtained in the hospital where this operation was performed, and that the defendant and the other surgeon conformed to that custom, and to the practice and custom of reasonably skilled and careful operating surgeons at the time that the operation was performed. Evidence that the defendant followed the usual practice of surgeons in leaving the care of the sponges to the nurses, and that such was the general practice among good surgeons up to the period when the operation was performed, and that good surgeons at the time of the trial still followed that custom, was proper under the circumstances, but not conclusive on the court or the jury. General custom is not as a matter of law due care.

Validity of Statute Prohibiting Advertising to Cure Sexual Diseases—Sufficient Indictment

(State vs. Hollinshead (Ore.) 151 Pac. R. 710)

The Supreme Court of Oregon affirms a judgment of conviction of the defendant of having violated section 2095 of Lord's Oregon Laws, as amended in 1913, by advertising a certain proprietary remedy, guaranteed to cure gonorrhea or gleet. The court says that the indictment very clearly and specifically stated that the defendant violated the law 'by then and there exposing and exhibiting to the view of a large number of persons, and displaying and publishing, in the aforesaid county and state, a certain advertisement, to wit, a sign, in words and figures as follows, to wit," and then set out in full the objectionable matter. This was clearly sufficient, although the defendant contended that the indictment did not contain a statement of the facts constituting the offense with sufficient clearness and distinctness to notify him specifically of the offense for which he was to be tried.

But the chief contention of the defendant was more serious, being the assertion that the statute on which the prosecution was based is unconstitutional and void. It was contended that the act is defective, in that the subject thereof is not fairly expressed in the title, and that the act embraces more than one subject. The title of the original statute as enacted in 1909 reads thus: "An act to prohibit the advertising of treatment or cure of venereal or other diseases, declaring the same a misdemeanor and prescribing a penalty therefor." The court thinks it will be conceded without argument that this title fully covers the scope of the act itself. The title of the amendment reads thus: "An act to amend section 2095 Lord's Oregon Laws, relating to advertising to cure sexual diseases." In the New Standard Dictionary the word 'sexual' is given as synonymous with "venereal,' and is so accepted in common usage. It follows that this contention of the defendant must fail.

The next point presented was that the act is unconstitutional and void in that it is class legislation, and is a violation of the constitutional guaranty of equal protection of the law. This may well be considered in connection with the final proposition that the act is void because it is not within the legitimate scope of the police power of the state and is a violation of the constitutional provision that no person shall be deprived of life, liberty, or property without due process of law. For many years it has been recognized by publicists and legislators that some drastic action is necessary to check certain social evils and to protect youthful and inexperienced humanity, not only from easy access to vicious and immoral practices, but also from the schemes of designing men, who, for the sake of financial profit, would prey on the calamities of the unfortunates who have sowed the wind and reaped the whirlwind. Further than this, it has been thought that the act of spreading broadcast, by means of advertising, the idea that certain venereal diseases are easily and cheaply cured, is against public policy, in that it has a decided tendency to minimize unduly the disastrous consequences of indulging in dissolute action. These views were evidently the moving principle of the legislators in the passage of the act under discussion. The purpose of the act is clearly in the interest of the public morals. It is not class legislation, for it applies to all who may be engaged in a like business.

The court regards the statute as a valid exercise of the police power of the state.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Chicago, Dec. 27-29.
American Physiological Society, Boston, Dec. 27-30.
Society of American Bacteriologists, Urbana, Ill., Dec. 28-30.
Southern Surgical and Gynecological Association, Cincinnati, Dec. 14-16.
Western Surgical Association, Des Moines, Iowa, Dec. 17-18.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Oct. 13, 1915

The President, Dr. Edward E. Montgomery, in the Chair

SERUMS AND VACCINES

General Principles of Vaccine and Serum Therapy

Dr. Thomas McCrae: Two factors obtain in an attack of an infectious disease—the virulence of the infecting organism and the resistance of the individual. Each may vary, and the possibilities for differences are endless. The contest between the infecting organism and the individual attacked gives the features of the disease. Recovery from the attack means immunity, in some cases permanent, in others, temporary. The toxins can harm only when they unite with the cells, free in the blood they have no power to do harm. The toxin may unite with the cell and kill it, or it may unite and do little damage. This contest between the infecting agent and the body cells is an exceedingly specific matter. On this rests much of the principle of vaccine therapy. For example take the number of strains of the pneumococcus. Infectious organisms find only a limited opportunity for development in the body, and in the majority of instances they are destroyed. The fact that many of the tissues of the body possess an immunity makes vaccine therapy possible. We speak of immunity under the two main heads of active and passive. The active is that in which the body manufactures its own protective substance, the passive, that in which the protective substance is introduced from without. In therapy we have the same division, active and passive immunization. The former is by vaccine, the latter by serum. The underlying principle in active immunization is by the use of vaccines to help the organism to produce the protective substance. The dose of vaccine must be such that the patient can overcome it by his own resistance, which is a difficult thing to estimate. In the use of vaccines it is advisable to make a strong distinction between acute and chronic infections. In the chronic form there is not the same danger as in the acute; the body has become more accustomed to the organism and dangerous reactions are not so probable. In very acute cases we should keep in mind the danger if the infection is very severe and the body resistance low. In estimating the results of vaccine therapy, it should be remembered that in the majority of cases the body itself is well able to take care of the infection.

It is dangerous to draw conclusions from the results of vaccine therapy in a limited number of cases. As a general rule we are considerably safer in giving vaccine subcutaneously than intravenously. Small doses are to be employed at first. In the production of passive immunization we are introducing help from without. This is most useful in acute infections, and as with vaccines, the serum must be specific to give the best results. It should be given as a rule in large doses. The method of administration should be considered, whether this shall be subcutaneous, intramuscular, subdural or intravenous depends on conditions. There is not the same danger of doing harm as with the vaccines. In some instances we combine the two methods. In reference to the whole subject, we may say that we are dealing with very delicate reactions; how delicate it is often impossible to know. Caution is necessary, particularly in acute infections. The reactions are extremely specific, therefore, we must have specific knowledge and specific remedies before we can interfere successfully. In talking about the principles of vaccine therapy, we must not forget that perhaps the greatest principle of therapy is to be certain that our remelies will do no harm Therefore, in regard to the use of vaccine, especially, let us always have a clear understanding of what we are doing, we agents with intelligence, and above all, be sure that we are not doing injury instead of good

Vaccine and Serum Therapy of Local and General Infections

Dr Alfred Stengel No one can properly approach a discussion of vaccine and serum therapy without giving some sort of expression to his views regarding the general principles on which such treatment is based, and the extent to which his practice would be governed by the scientifically demonstrated principles that are applicable In February, 1914, in a discussion before the Royal College of Physicians in London, Dr Rolleston said he would divide the opinions regarding vaccine therapy into three groups 1 The optimistic, held by those who, while under the fascination of a new conception of a really rational treatment, have seen successful cures This attitude is usually modified in time 2 The pessimistic, more often expressed in private than in print, according to which vaccines never do good, and owe their apparent use to coincidence or suggestion 3 The doubtful or open minded Rolleston said that he belonged to the last class I, myself, claim to belong to the first, freely confessing that the fascination of theories supported by some demonstration in experimental investigations quite carried me away I am not quite certain that I fulfil Rolleston's idea of the latter part of the characterization of Group 1 because I am not conscious of having had my views modified Like others who have made trial of these methods of treatment, I have sometimes seen brilliant results, and again, have failed to find them in cases apparently entirely similar, which may indicate that we have much to learn regarding practical details There are many reasons, however, why I feel that an attitude of conservatism should be held on the matter of vaccine and serum therapy, and I cannot but recall the contrast between the attitude of the profession toward antidiphtheritic serum and that now exhibited toward vaccines, all sorts of serum and similar preparations Whereas antidiphtheritic serum, whose claims to recognition were founded on the most rigidly scientific demonstrations, was received with scant courtesy and even denied for a considerable period of time, the professional attitude at present is to receive with open arms any and all sorts of vaccine and serum treatments resting on no sort of foundation, or on the flimsiest evidence Sometimes it has been said that progress in drug therapeutics has been largely based on experiment in man, and that serum and vaccine therapy should be advanced by the same method There is a fundamental difference, however, in these two methods of treatment So long as the gastro-intestinal tract is functionally intact, the administration of any nontoxic drug is a matter of little moment, and even toxic drugs in sublethal doses may be tolerated, or if irritating, rejected The subcutaneous or intravenous injection of vaccines or serums is, however, an entirely different matter, and we should not forget the distinction Another reason for conservatism is that vaccines and serums are distinctly capable of doing harm It is often said that in serious diseases such treatment may as well be tried because it can do no harm This statement is grossly incorrect On the contrary, I could easily produce evidence that both vaccines and serums are capable of causing injurious effects I do not wish to be misunderstood in offering these reasons for a more conservative attitude toward this whole question No one who has read the medical journals or the newspapers need be apprehensive that vaccines and serums will fail to receive a fair trial, but there is grave reason to suspect that they will be abused

Dangers and Futility of the Indiscriminate Use of Serums and Vaccines

Dr M Howard Fussell A serum is specific only against the toxin generated by the organism used in the preparation of the serum A vaccine will generate immune bodies only against the organism from which the vaccine is made Failure to grasp these facts is perhaps responsible for the greater part of the indiscriminate use of vaccines and serum Unfortunately, many practitioners base their belief in the value of vaccines and serums on the statements of manufacturing firms and their detail agents Many manufacturing firms have distributed to the medical men brochures containing statements some of which are true and others half true and misleading It is questionable whether general infections are favorably affected by vaccines Successfully to treat general or local infection with serum or vaccine we must use the serum or vaccine made from the causative organism To use any stock vaccine with propriety, one made from the type of organism to which the infection is due is essential A mixed or combined vaccine is composed of entirely unrelated organisms, not different strains of the same, and it is certainly carrying the use of shotgun prescriptions to a wide range to give organisms of entirely different characteristics Such treatment is futile and may easily be dangerous Phylacogens, according to their manufacturers, are neither serums nor vaccines, but "sterile aqueous solutions of metabolic substances or derivatives generated by bacteria grown in artificial media" "The phylacogens are made from a large number of species of the well-known pathogenic bacteria" I have read many of the case reports of patients said to have been cured by some of these specific phylacogens They are equaled by many of the testimonials of "patent medicines" seen in the daily press I consider the use of such preparations as these both dangerous and futile, dangerous because of the severe reactions which take place, futile, because their use is not founded on proper observation or followed by justifiable results The dangers in the indiscriminate use of serums and vaccines are due chiefly to a misunderstanding of the basic laws and the following of the uncensored advice of the manufacturers of vaccines and serums

Discussion on Serums and Vaccines

Dr S Solis Cohen The keynote struck in the papers may be summed up in the word "caution" We must use these remedies intelligently, for definite purposes, under definite conditions That may be said of any remedial measure At the present time we must use a scientific empiricism in the application of biologic agents, for I am not so sure that we have arrived at a scientific explanation of the action of vaccines

Dr James Tyson From my observation of vaccine and serum treatment in the hands of other men, I am convinced that the treatment is justified in a great many instances, especially after a trial of the older methods of treating such affections

Dr H M Christian In the department of medicine in which I am specially interested I think we have fairly well crystallized in our minds the futility of vaccine therapy

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NATIONAL ASSOCIATION FOR THE STUDY OF PELLAGRA

Third Triennial Meeting, held at Columbia, S C, Oct 21 22, 1915

(Continued from page 2029)

The Prevention of Pellagra A Test of Diet Among Institutional Inmates

Drs Joseph Goldberger C H Waring and D G Willets Washington, D C Published in *Public Health Reports,* Oct 22, 1915, p 3117, and commented on in "Studies of Pellagra," editorial, The Journal, Nov 20, 1915, p 1818

The Treatment of Pellagra by Diet

Dr David G Willets, Washington, D C In June, 1914, the treatment of acute pellagra by a rich animal protein diet was begun at the Georgia State Sanitarium, Milledgeville, Ga, by W F Lorenz of the United States Public Health Service, under the direction of Surgeon Joseph Goldberger Beginning Aug 19, 1914, the work was continued by me until Oct 24, 1914, when the therapeutic study was discontinued, and the preventive study reported in another communication (Goldberger, Waring and Willets) was begun

Forty-three patients were treated Of this number eight are excluded because death occurred after brief periods of observation, three because of the presence of complications in themselves competent to cause a fatal outcome, and two because they were transferred from the ward with severe complications after brief periods of residence on the pellagra ward Of the remaining thirty patients eleven improved seventeen recovered and two died, giving a mortality of 6 6 per cent The treatment given was simply a generous diet, rich in animal protein, in some of Dr Lorenz' cases bismuth subnitrate, emulsion of cod liver oil and an antiseptic mouth wash were prescribed

No far-reaching conclusion can be drawn from the results obtained in this work Those who have cared for insane patients will appreciate the difficulties one encounters in dealing with this class of individuals Many of the patients were so negative or so excited that their actions could not be controlled These factors all tend to retard favorable results from any form of treatment. A mortality of 6 6 per cent in this type of patient must, therefore, be considered as an extremely encouraging result and this must be kept in mind in judging the merits of any treatment other than diet

DISCUSSION ON PREVENTION AND TREATMENT OF PELLAGRA BY DIET

Dr. J F Siler, Washington, D C In our work in Spartanburg County we have constantly noted that diet has a very great deal to do with pellagra, its cure and prevention As to whether an incomplete or poorly balanced diet is merely one of the most important predisposing factors or is the one essential factor still requires demonstration Many epidemiologic observations warrant the inference that an incomplete diet is only an important predisposing factor bearing somewhat the relationship to pellagra that it does to tuberculosis It has been a common observation with us that if a patient suffering with acute symptoms of pellagra followed our advice in applying the same treatment for pellagra as for tuberculosis—an abundance of fresh eggs and milk—his chance of recovery was much enhanced Also, patients carrying out this line of treatment would, after recovery, revert to their former incomplete dietary, and yet pass through the following one, two, three or four years without any manifestations of pellagra. Some schools hold even today that tuberculosis is essentially a food deficiency disease for which the treatment is eggs and milk. It still remains to be demonstrated scientifically whether eggs, milk and fresh meat bear the same relationship to pellagra as to tuberculosis, or, on the other hand, contain large amounts of true pellagra-preventing vitamins as do peas and beans contain large amounts of beriberi-preventing vitamins

Dr. H. F Harris, Atlanta, Ga I arrived at Dr Goldberger's conclusion shortly after I began working on the subject ten or twelve years ago Subsequently I discovered that this idea was very old Solair advanced the view definitely in 1781 He took ten patients and fed them on good food for a year and was rewarded by observing that the eruption failed to appear next year and good results were observed after that I believe there are certain possibilities of spring recurrences being explained by bad maize It is well known that the starches of maize and other cereals when acted on by molds produce poisons, and in accordance with this is the modern acceptation of pellagra by the Italian writers It has been shown that it is too cold for molds to grow naturally in winter They develop in the spring, and toxic phenols develop in the maize in large amounts When the temperature goes up, the action ceases, and the poisonous phenols are perhaps changed In summer this does not occur, while in the fall these poisons begin again to form, and it would be assumed that these poisons would be most likely to recur Pellagra has uniformly and persistently occurred where people have persisted in eating maize, and disappeared where they ceased to eat it

Dr. James Adam Hayne Columbia, S C. If you can give a man food in proper proportions in such a way that he can assimilate it, you will strengthen his resistance and make him throw off the disease. That is as far as the question of diet can affect the causation of disease If a man who knew nothing about tuberculosis was taken to a tuberculosis camp and told that the patients were given meat, eggs, milk and other food in proper proportion, that their temperature was reduced, their physical well-being improved, and that, to all intents and purposes when they left the institution they were well would he conclude that a properly balanced ration was the cure for it? He might conclude it was a cure for tuberculosis, but would he conclude that an improper diet was the cause of tuberculosis?

Dr. W J MacNeal, Washington, D C There is poor nutrition among people who have good things to eat. Other factors in the body besides the food may predispose to the disease We certainly have these summer diarrheas among well-to-do people Children's diseases occur among those who have good diet as well as among those who do not Overwork is a factor The question of childbirth and operations are predisposing factors in pellagra The nutrition of the aged gradually diminishes Poor diet is only one factor We have poor nutrition throughout the world, but pellagra is a local disease in its first attack, not necessarily in its recurrences and that is the important dstinction to which Dr Goldberger referred

Dr J W Babcock Columbia S C. I deny that pellagra is a local disease You will find pellagra in all parts of the United States and in Canada, it is a universal disease

Dr. G C Mizell Atlanta Ga The way the foods that Dr Goldberger prescribed are prepared has a bearing that he has not spoken of in his paper Four years ago I believed in forced feeding and in a great deal of food, and I pushed it I now know that I lost some cases because I forced food It is a mistake to force food on a pellagra patient, or to take a nursing infant from the breast Let the infant continue nursing results will bear out the value of this suggestion Dr Willets' patients were extremely emaciated The weight of the patient, when he comes to you, will have a lot to do with the course of the disease Emaciated patients recover more rapidly and are less likely to have a recurrence

Dr David G Willets Washington, D C I fully appreciate that there are some very severe cases in which forced feeding must be used with caution, but to make the general statement that forced feeding of pellagra is incorrect would give a wrong impression In the majority of acute cases the patients really need forced feeding At least, that is the way it impresses me, from the response of my patients to diet I wish to say that in the work I did and reported here, extremely careful attention was paid to the patients They were weighed at very frequent intervals and I took change in weight as being a pretty good index as to how the patients were getting on Dr Mizell is right about certain severe cases One should proceed with caution in feeding the patients It is best to give them small quantities at a time but frequently

Dr. Joseph Goldberger, Washington, D C. It is an interesting psychologic phenomenon that the profession is extraordinarily interested in the discussion of pellagra I can get a rise out of physicians any time the cause of pellagra is mentioned, and they will talk by the hour, but if one diplomatically suggests the very simple or practical device of treating the patient they will change the subject There is an adage to the effect that "the proof of the pudding is in the eating thereof" and the only thing that I care to say in closing is Suppose we stop talking so much We do not have to inject salvarsan etc

Some Phases of the Work of the Robert M Thompson Pellagra Commission

Dr. W J MacNeal, New York This is essentially the second progress report of the Thompson-McFadden Pellagra Commission as published in September and October, 1914 in the *Archives of Internal Medicine*

DISCUSSION

Dr. Joseph Goldberger, Washington, D C The commission states that its extensive dietary study failed to indicate the presence of either a pellagra-producing or a pellagra-preventing food in the mill village populations studied, and it expresses the opinion that no such things exist By reason of the inadequacy of the method of analysis applied to the data, no conclusions whatever are permissible That this is so is perhaps best illustrated by referring to that portion of the dietary study dealing with milk The commission suggests that the daily use of milk has preventive value, 13 5 per cent of the families using milk daily had one or more cases of pellagra, 22 5 per cent of those using milk habitually (as often as twice a week) had one or more cases, and 13 6 per cent of those using this food rarely had one or more cases Their results show that the "daily" and the "rare" use of milk have preventive value This singular paradox alone is enough to convince the impartial student that this dietary study cannot be seriously considered When the data in this study are properly viewed one finds clear indications of the existence in the mill villages studied by this commission of an inverse proportional relation between the percentage of families using meat and using milk "daily" and "habitually" and the degree of pellagra prevalent in that village In other words, of two groups of villages, that group which shows a larger proportion of families using milk "daily" and "habitually" will have the smaller amount of pellagra

The commission considers the results obtained from its domiciliary study as conclusively proving that pellagra is an infectious disease, but as in the dietary study, no conclusion whatever is permissible The fundamental method of analysis employed in this domiciliary study is defective in that, as regards the so-called second zone, the percentage of incidence of new cases varies not alone with the actual number of cases, but also with the position of the houses in which the new cases may happen to appear

As for the relation of pellagra to sewerage, as shown by the practical freedom of the sewered sections of Spartanburg, this may be an instance of "false correlation" When we recall that pellagra is essentially a disease of poverty an explanation for this seemingly mysterious phenomenon at once suggests itself In a community having a sewered section and an unsewered section, it is very likely, and in Spartanburg it actually so happens, that the sewered section includes the best residential portion of the town The sewered section is that part of the town in which the well-to-do people live, in which even the neophyte pellagrologist would not expect to find much pellagra, sewers or no sewers

Dr Roy Blosser, Atlanta, Ga Dr MacNeal ignores sensitization altogether, but I think this is one of the greatest established facts in regard to certain foods It means that during the development of pellagra the people who develop it may be using only a fractional part of the foods used by those who do not develop the disease, but they are so sensitive that the smaller amount has a greater effect He did not say what percentage of the total number who had pellagra used maize That is of vital importance His dietary study is valueless unless he takes into account all the foods eaten I am not saying this particularly because he left out sugar-cane products He did not show what they ate in the sections with the good water closets, where they had never had pellagra He did not show whether, when they installed good water closets, there was any change in what they ate That I consider of great importance He thinks the infection from bad closets might combine with the poor nutrition to cause pellagra, but he did not show that there was any poor nutrition In my experience very often during the time that they show their earliest symptoms of pellagra, they show evidences of unusual nutrition, they are fat and overweight

Dr J F Siler, Washington, D C It must be remembered that when we began our studies, corn itself was the article incriminated, and this study was made primarily to determine whether corn or any other particular article of food could be correlated with the occurrence of pellagra We thought of considering groups of foods, but it took two of us about three months to work out the correlations presented by Dr MacNeal So far as the grouped consideration (statistical) of the diet of the individual is concerned, we found it to be most feasible to consider only the pellagrins We were very much struck by the sewerage question, and the observations were so striking that we considered it desirable to present them in order that they might or might not be confirmed by other observers We investigated two mills at Union, S C, in 1914 One had the water carriage system of disposal and the other open surface privies At these two mills we found that pellagra had diminished very markedly in the sewered mill following the installation of a sewage disposal plant, while in the other no such change for the better had occurred Dr Maddux says that few new cases occurred in 1914 in the sewered mill, while a large number of cases have occurred in the unsewered mill Dr Weston told me of two mills in Columbia, one with sewers and the other without, and that he knew of only two cases in the sewered mill village, and both of the patients had the disease on arrival In the unsewered mill a large number of cases occurred in 1915 It is wise to follow such observations over a long period of time before arriving at any definite conclusions

This dietary study has been a correlation as to the frequency of the use of certain foods Of one food, in which there exists no correlation, no mention has been made Practically every family throughout the South uses wheat flour every day It forms the most important bread component of their dietary Whether any changes have occurred in the milling of wheat flour in the last ten or fifteen years which could have removed the hypothetic pellagra-preventing vitamins, I do not know I know that before the Civil War more whole wheat flour was used in the South, but so far as I have been able to learn, no important changes in milling have occurred during the past ten years It might be possible that the finely milled white wheat flour could bear somewhat the same relationship to pellagra as does highly polished rice to beriberi Last winter I saw a patient from the South who had suffered a very severe attack of pellagra in 1911, and in securing a history of her food habits was somewhat surprised to learn that for two years prior to the initial attack of pellagra she had been in the habit of eating not less than twenty-four whole wheat biscuits a day to correct constipation

Dr G C Mizell, Atlanta, Ga In a series of eighty-two cases out of the 100 that I presented here in 1912 which came under observation in 1911, or before, there were six families containing more than one case This series represented sixty-eight families, composed of 341 persons Up to date there has not been a single new case in these families since 1911 In addition to this series of cases, I have been able to follow up another series of eighty-three cases which came under my observation from 1911 to 1913 The last series shows the same points of interest as the first series The two series total 165 cases, representing 147 families, composed of 764 persons

Dr James D Bozeman, Fort Worth, Texas Until October 10 we had treated in our institution, 114 cases of pellagra this year, representing about 41 per cent of admittances The majority of these cases were drawn from Texas territory, about 80 per cent represents the families of ranchmen or farmers who own their own farms or ranches Now these farmers or ranchmen will tell you that their chief diet is milk, butter, eggs, beef and fresh hog meat, with of course the usual garden vegetables, and it is seldom that you find one who will admit that he does not live off the products of his own ranch and garden If you ask them about the consumption of corn bread, they will likely laugh at you and reply that corn is raised to feed to horses and hogs Some 15 per cent of these men will tell you that they have corn meal on their ranch and that some of their boys (cowboys) enjoy corn bread, but we hardly ever have a cowboy in our institution for treatment When asked about lard they will tell you that they do not use cottonseed products, but that the lard they use is made from their own hogs, raised and killed on their own ranches

Dr H F Ivy, Whitney, Texas I believe that pellagra is an infectious disease Those of us who have done much surgery find that often a patient, unsuspected as a pellagrin, after an operation will develop a fulminating case of pellagra I find that some persons after a long period of nursing—not of pellagrins—and anxiety, have developed pellagra An excessive diet of sugar may eventually so derange the system that it will put us below par Even too many beans will produce toxemia

Dr. W J MacNeal, Washington, D C The problem which confronted us was the analysis of the mass of data recorded on cards in the symptomatic fashion I think the one method commonly used with at least 1,000 comparable observations is that adopted by Davenport and by Pierson Where there are a number of variables in group statistics the theory of chance presupposes that in a large group under observation—anything above 1,000—any neglected factor will be of no avail That is to say, the influence of any factor neglected in the analysis will have only a chance effect which will equalize itself in such a group We were dealing with about 6 000 individuals and observations, and this was quite justified

We must do something with the data besides theorizing with them We must try and show some correlation That is what we have attempted to do by the statistical method It is probably unnecessary for me to point out that the table which Dr Goldberger cites specifically relates to pellagrins and total families in which a case existed and did not originate This is the correlation between the existence of a case in a family and the use of milk in that family at the time of our observation So from our point of view, this table has very little importance Of course it all depends on whether or not you think there is any real difference and importance in distinguishing between this All of our work has taken into consideration the first attack as quite different from the subsequent attacks and any one who has really studied pellagra and has followed it must acknowledge that there is a distinct and important difference between the first attack and subsequent attacks The first attack occurs in certain definite places, the second attacks may occur anywhere. It is only by distinguishing between first and subsequent attacks that we have been able to bring out these distinctions

(To be continued)

SOUTHERN MEDICAL ASSOCIATION

Ninth Annual Meeting held at Dallas Texas Nov 8 11 1915

(Concluded from page 2031)

The Small Town The Neglected Unit in Sanitary Administration

Dr. A. W Freeman, Washington, D C The fundamental sanitary needs of the small town are those of water supply and excreta disposal The shallow well and the privy must be condemned Neither the well nor the privy is sufficiently protected A public scavenger and the can privy should be advocated Such privies are easily cleaned, and the breeding of flies is kept down and public health protected The great need of the South today is the improvement of the rural home.

Sanitation of the Rural Home

Dr. R. N Whitfield, Florence, Miss The rural home needs more improvement, as a rule, than any other home In the South the rural population is greatly in excess of that of the cities and towns and the public health services have been performed in the cities and towns to the exclusion of the rural districts One exception has been made, and that is the work done by the Rockefeller commission which has been laboring five or six years in eleven of the Southern States A full-time health officer should be placed in charge of every county in the South, and he should be a capable and competent man.

Intensive Community Health Work

Dr. John A. Ferrell, New York Intensive community health work differs from ordinary health work in that a concrete health problem is taken and adhered to until measurable progress has been made It is limited to a relatively small circumscribed area instead of being diffused throughout a large area, such as a state or a county A detailed record or a survey is made of the area selected including every home, school, church, road and stream, and usually the information is shown on a map Every home is visited and inspected, and every person examined as far as practicable, with reference to the particular health problem under consideration A record of the disease in the past and its probable consequences is made so that when the work begins there is a definite starting point.

Rural Sanitation in the South

Dr. J Howell Way, Waynesville, S C The employment of a full-time country health officer should be on scientific merits rather than on a political basis The chief difficulty in county work is the lack of a well-defined plan of procedure A rule of standards and model system will be worked out for counties soon Eventually when methods of rural sanitation become standardized and our counties grow in population as well the unit system operated by state boards of health will naturally and appropriately give place to the whole-time county health officer, but for the next five to fifteen years the unit system possibly is destined to exercise a more practical and helpful influence on the progress of rural sanitation than can be invoked by any adherent solely for the whole-time county health officer plan, which so many counties do not feel they may institute as yet

Immediate Necessity of Intensive Health Work in the South

Dr. A. L. Lincecum Austin, Texas Housing conditions are deplorable, especially among the tenants in the farming districts The absence of screens on the doors, windows and porches of these homes costs annually for treatment of malaria more than the expense of screening would be

Use of Radium in Uterine Bleeding Due to Myometrial Dgeneration

Dr. C. Jeff Miller, New Orleans Radium has proved a boon in inoperable cases of carcinoma, but I would not recommend it as the sole treatment in operable cases The only treatment that promises relief from cancer is its early removal by surgery I have used radium in a number of cases with beneficial and satisfactory results Radium, when properly screened may be used as economically inside the body of a patient as by being kept in a medicine case at the office

Malaria and Uncinariasis

Dr W S Leathers, University, Miss Malaria and hookworm disease so devitalize the human body that typhoid and tuberculosis easily complete the destruction The insidious diseases must be stamped out. before any noticeable impression can be made on the diseases having a higher degree of mortality Teaching simple sanitation to the people is one of the great duties of public health departments I cannot understand why our government is spending millions to put water on lands in the West that will never be as productive as our lands of the South, and it will not give one cent to take the water off the land of the South Our richest lands are those which become covered with water

Immediate and After-Treatment of Railway Injuries

Dr. W W Grant, Denver The importance and necessity of immediate first-aid treatment in such cases is apparent by reason of the fact that these accidents are generally defined as contused lacerated and mangled and are much more prone to infection than smooth wounds The application of iodin hydrogen peroxid and alcohol pending the transfer of the patient to a permanent place of treatment is common Probing is seldom justified under any conditions It is dangerous to operate while the patient may still be suffering from the shock of an accident and many surgeons do not realize the value of proper reaction before operating. To add a physical shock to physical injury will generally prove hurtful to the patient. There is no more urgent field for skilled surgery than the treatment of mangled feet, hands and fingers Lacerated tissues are more liable to infection and heal more slowly than other wounds The sewing up of torn and lacerated wounds is a sure harbinger of infection. Such wounds will have to be opened up again Drainage tubes constitute the safest plan for the prevention of infection Scalp wounds are not generally attended by severe shock, and heal rapidly, but the most insidious wound is the small punctured fracture Every such wound demands early investigation, or serious results are liable to follow

Treatment of Malaria with Reference to Its Eradication

Dr T E Wright, Monroe, La In one of the hospitals used by a railway in North Louisiana, 747 cases of malaria among the railway men were treated during the years 1912, 1913 and 1914 Between Jan 1 and Nov 1, 1915, 249 cases of malaria have been treated The patients remained in the hospital from four to six days This short stay in the hospital was due to the intensive treatment given malaria cases This economic feature of intensive treatment and prompt results when applied to the whole malarial district of the South is a matter of much greater importance and should receive serious consideration on the part of medical men Intensive treatment of malarial patients must be employed in order to decrease the number of carriers The intravenous use of quinin, administered with proper care, in doses of 10 grains, in proper dilution, repeated in from eight to ten hours once or oftener, according to the case, is the type of intensive treatment that more nearly sterilizes the blood of malaria than any other method heretofore employed Fewer cases of recurrence will follow the intravenous use of quinin The discomfort through this treatment of the patient is slight or of short duration, not lasting over five or six minutes

The Sex Question in Public Health

Dr Isadore Dyer, New Orleans The sex question is essentially one of public health Facts, not preachments, are needed in presentation of the sex question to young men and women. Perhaps the public school would be a good place to teach sex hygiene, and the proper men and women can be found to tell the children about the things that every child should know

DISCUSSION

Dr. E H Martin, Hot Springs, Ark Children in public schools should be separated Segregation of sex is practiced in a Mississippi town in the public schools Co-education causes a boy to learn subservience to a woman, and he does not make a very good soldier in later years

Dr Allan W Freeman, Washington, D C I have been attending public health meetings for a number of years, and have never heard a frank and honest discussion of the sex question It is a question of health and should be treated as such

Syphilis Its Relation to Public Health

Dr. Lloyd Thompson, Hot Springs, Ark All affected persons should be registered and a heavy fine should be imposed on the physician for failure to report The marriage license should not be given to any one until he has been examined thoroughly and has withstood certain tests Employers should require a bill of health of every employee and should refuse employment to any person who will not submit to a physical examination If prostitution is permitted, it should be put under strict surveillance and regular medical examination

Health Conservation Through Life Insurance Companies

Dr J L Davis, Waco, Texas The life insurance companies of the United States have taken the lead in matters of sanitation and right living They have been advocating proper living and demanding it of their policy holders Tuberculosis is recognized by insurance companies as exceedingly infectious, and for many years they have made careful inquiries into the lives of applicants for insurance along this line They have gone so far as to ascertain whether the applicant has been associating with tuberculous people Typhoid fever is the arch enemy of insurance companies Next is alcohol, and the greatest temperance lectures of the age can be taken from the records of almost any life insurance company

Sanitary Preparedness

Dr Rupert Blue, Surgeon-General U S P H S, Washington D C The maintenance of sanitary preparedness is no less the duty of the individual than it is of the community It is not altogether easy to teach so convincingly that the layman will appreciate these things If the simple truths of sanitation are impressed on the plastic mind of the schoolchild, we gradually create a people in whom sanitary living is a habit. If by child hygiene we produce better and stronger men and women, these in turn will bring into the world stronger children, because they will have learned that mating with the weak and defective produces weak and defective children Thus we shall have a practical eugenic betterment

The impression I desire to leave in your minds is that, if America would avoid decay and retrogression, if she would be ready for the supreme trial of strength when the hour of calamity comes, she must retain her sanitary defenses at all times The sane and healthy nation, republic of healthy minds in healthy bodies, adding by its labors, uninterrupted by disease, to the material and spiritual welfare of the world, is prepared alike for peace and war

The Allen Treatment in Diabetes by Fasting

Dr. Isaac Ivan Lemann, New Orleans Allen believes that we have been wrong in trying to maintain or increase the weight of our diabetic patients when glucosuria persists, for such attempts simply keep the body at a size beyond the capacity of the pancreas to provide sufficient internal secretion for it. Better, therefore, to have the body thinner and have enough pancreatic secretion to do the work of a smaller body This pancreatic internal secretion he would have us conceive as an amboceptor binding blood sugar to the tissues When the amboceptor is lacking, the unbound sugar is secreted by the kidneys Allen's proposals are (1) to starve the patient until the urine is sugar-free, (2) to add gradualy to his diet until the point of tolerance of protein and fat, as well as of carbohydrate, is reached, (3) to remain within these points of tolerance, no matter how low they may be and no matter how thin the patient may be Attempts to increase the patient's weight by the addition of a large number of fat calories to the diet results in the return of the glucosuria My short experience with Allen's method, embracing now five cases, has served to free me of the fear of precipitating a severe acidosis by the sudden starvation, and, secondly, it has convinced me in one severe case of its great possibilities in certain cases at least The other four cases were mild Two of them I have tried in vain to make aglucosuric by gradual reduction of carbohydrate intake, then of protein intake, and finally in one of them by the interposition of green days These two patients became aglucosuric in twenty-four and forty-eight hours of starvation, respectively The other two mild cases required twenty-four and seventy-two hours' starvation, respectively In none of these four did acetone appear in the urine None of the patients had any serious complaints Not only was the disappearance of the glucosuria brought about more promptly and with less trouble both to the patient and to me than by the former technic, but also it was possible to build up these patients quite a livable diet and still maintain them aglucosuric In the two patients whose points of tolerance I had tried to determine by the older method, I found the new tolerance quite satisfactory and far in excess of what it had been prior to the past My brief experience with the method has been sufficiently satisfactory and enlightening to encourage me to proceed

Pyelitis in Infancy and Early Childhood

Dr L R DeBuys, New Orleans The majority of cases of pyelitis occur in children under 3 years of age, and of these most of them under 2 In from 90 to 96 per cent of the cases females are affected It is highly probable that much of the trouble in the adult female kidney may have its origin in the infections of the kidney during infancy and childhood Pyelitis may be primary or it may be secondary to a cystitis The treatment of pyelitis may be included under four heads (1) drugs, (2) irrigation of the pelvis by the direct method, (3) irrigation of the pelvis by the indirect method, (4) vaccines Many drugs have been advocated, among them hexamethylenamin, potassium citrate, methylene blue, creosote and salol Of these the first two are used most frequently Hexamethylenamin is best given early and in large doses, from 2 to 3 grains, every three or four hours, to a child from 1 to 2 years of age. By far the most reliable method of treatment in pyelitis in the small patient is by irrigation of the pelvis of the kidney by the indirect method By this is meant the giving of large quantities of liquids It is well to dilute their food so that they may be always hungry and in order to satisfy their hunger they must take large quantities of fluids to receive a sufficient quantity of nutriment Vaccines are sometimes of benefit and should be autogenous Their effect is not uniform and reliable but in some instances has been of advantage. They should be given in doses beginning with 50 000 000 and increasing rapidly to 200 000 000 or even 250 000,000, the interval varying from three to five days, depending on the reaction of the patient and the recovery from the reaction. In the resistant and chronic cases the autogenous vaccine is more especially indicated Should the vaccine not produce an immunity after from three to five vaccinations, as shown by the bactericidal property of the blood, its use should be discontinued

Dietetic Treatment of Bronchial Asthma

Dr. **Allan Eustis**, New Orleans A review of 178 cases justifies the following conclusions 1 Most cases of bronchial asthma are due to absorption of proteolytic toxins 2 These toxins may be absorbed from a suppurating accessory sinus in the nose or from the intestinal canal 3 Treatment of intestinal toxemia is as important as any drainage of focal infections 4 An alveolar abscess may be the focus from which the toxin is absorbed 5 In the dietetic management of asthmatics, animal proteins, with the exception of buttermilk should be eliminated from the dietary as much as possible

Influence of Potassium Iodid on Syphilitic Reaction

Dr. **Randolph Lyons** New Orleans That iodin is the essential factor in producing the positive reaction in a nonsyphilitic individual is demonstrated by the fact that hydriodic acid thyroid extract and possibly hyperthyroidism will produce a similar effect. When a luetin test is made, it is essential that no iodin in any form (potassium iodid) be taken internally Furthermore, it is important to know that iodin has not been ingested for at least three weeks previous to the performance of the test. Torpid or later reactions occurring after intervals of two weeks are usually due to the ingestion of potassium iodid The reaction may be influenced after an interval of two months by the subsequent administration of potassium iodid (Sherrick) Anomalous reactions may generally be attributed to potassium iodid Activation of the luetin test with mixed treatment vitiates it. Clinical differentiation between the two, luetin reaction and iodin reaction cannot be made with any degree of certainty When a positive test develops very rapidly an iodin reaction may be expected The extreme prevalence of the use of iodin in some form (potassium iodid) will necessitate a critical review of the published reports of positive reactions in order to eliminate the iodin reactions This will undoubtedly lower the percentage of positive results

Influence of the Injection of Blood on Anemia and Infections in Children

Dr. **J Spencer Davis**, Dallas Texas In the injection of whole blood we have the therapeutic means of increasing the number of white blood corpuscles In many cases a crisis in the disease can be brought on and the destruction of bacteria in the body is hastened We have found it of great value in the acute infectious diseases of children such as scarlet fever Like all other therapeutic measures, it sometimes fails where it is most needed, and its value is dependent on the ability of the individual to respond to the injection I have never seen any bad results following the injection, although at the site of the injection we have the same series of color changes which occur in an ordinary bruise

Scurvy Versus Rheumatism

Dr. **Dandridge P West**, New Orleans The prognosis of scurvy depends on the early recognition of the disease, severity of the symptoms and the complications Death in untreated cases results usually from hemorrhage exhaustion and bronchopneumonia In recognized cases, the treatment is highly satisfactory and none is more easily instituted It may be covered briefly by the rule Discontinue all previous feedings especially if they have been patented, boiled or sterilized, give fresh milk, fruit juices, and if the digestion will stand it, puree of potato or green vegetables In all suspected cases the effect of treatment, the therapeutic test, is of the greatest value, inasmuch as the results show in forty-eight hours, and no harm, as a rule, can be done by waiting so long If in doubt when the baby is unduly irritable on being handled, and shows perhaps local manifestations of joint pain preclude first the idea of rheumatism, change the diet to raw milk, and give orange juice

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Anatomy, Philadelphia

November XVIII No 3 pp 329 598

1 Development of Human Pharynx Pharyngeal Derivatives. B F Kingsbury Ithaca, N Y
2 Lymph Flow and Associated Morphologic Changes in Early Superficial Lymphatics of Chick Embryos. E L. Clark St Louis
3 Origin of Definitive Sex Cells in Female Chick and Their Relation to Primordial Germ Cells. C H Swift Chicago
4 *Model to Illustrate Probable Action of Tectorial Membrane. I Hardesty, New Orleans
5 Development of Blood Vessels of Mammary Gland in Rabbit H M Wahl Madison, Wis.
6 Study of Wandering Mesenchymal Cells on Living Yolk Sac and Their Developmental Products Chromatophores Vascular Endothelium and Blood Cells. C R. Stockard New York.

4 **Action of Tectorial Membrane**—According to Hardesty, the tectorial membrane is a vibratory structure and from its consistency, shape, proportions and position, is the chief vibratory structure in the cochlea It may vibrate in such a way that a modification of the telephone theory of hearing may be applied to it Sound waves of low vibration frequency produce vibrations in the entire tectorial membrane regardless of amplitude, while those of higher frequency produce vibrations in varying extents of it, depending on their amplitude Among the sound waves of the higher vibration frequencies capable of being appreciated, the extent or length of the tectorial membrane in which efficient vibrations may be induced depends more on the vibration frequency or pitch than on the amplitude of the sound waves The higher frequencies being damped out more readily than the lower, varying extents of the membrane are affected according to the vibration frequencies of the waves applied, the highest frequencies affecting the thin, basal end of the membrane alone Some evidences of what may be considered resonance in the tectorial membrane were indicated, but were thought questionably trustworthy as such No resonance of the form demanded by the Helmholtz theory is possible It is suggested that no resonance or analysis of sound is accomplished by the cochlea in itself other than such as may be possible in the evidences that, beginning with its basal end, different extents of the tectorial membrane may be thrown into vibration by different sound waves, depending on the frequency and amplitude of vibration It is admitted that waves of low frequency and high amplitude may induce vibrations also in less flexible and otherwise less adapted

basilar membrane as a whole Attention is called to the fact that its chief load, the spiral organ, increases in size in passing from the base to the apex of the cochlea and that this suggests a vibratory behavior possible in it similar to but not so comprehensive as that claimed for the tectorial membrane

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

October, III, No 4, pp 183 246

7 Barbados in British West Indies Pellagra in Barbados J F Siler, U S Army
8 Transmission of Malaria in Philippine Islands E L Walker
9 Endamebiasis of Mouth K M Lynch, Charleston, S C

Annals of Ophthalmology, St Louis

October XXIV, No 4, pp 611 835

10 Carcinoma, Apparently Primary, Arising from Ciliary Processes E R Neeper, Colorado Springs
11 Peripheral Annular Infiltrate of Cornea Following Scleral Perforation F Lane, Chicago
12 Albinism in Man with Special Reference to Eye W E Gamble, Chicago
13 Blind Spot H S Gradle, Chicago
14 Complete Left Lateral Hemianopsia with Glucosuria as Result of Slight Trauma F E Woodruff, St Louis
15 Mydriatic Action of Dextrohyoscyamin R J Terry and M Wiener, Washington, D C
16 Conscious Vision in Development of Amblyopic Eye F P Lewis, Buffalo
17 Is Migraine a Forerunner of Glaucoma? R S Lamb, Washington, D C
18 Herpes Zoster Ophthalmicus B Chance, Philadelphia
19 Fifty Consecutive Intracapsular Cataract Operations. W A Fisher, Chicago

Archives of Pediatrics, New York

October, XXVII, No 10 pp 721 800

20 Plea for Accurate Statistics in Infants' Institutions H D Chapin, New York.
21 Apparently Complete Recovery After Operation for Cerebellar Tumor L Porter, San Francisco
22 *Rapidly Advancing Pulmonary Tuberculosis, Report of Case F Hall, New Rochelle
23 Some New Features in Diagnosis of Scurvy, with Brief References to Metabolic Changes A Brown, Toronto, Canada
24 *Management of Enuresis A Newlin, Philadelphia
25 Fatal Afebrile Nonparalytic Polioencephalitis Treatment by Autoinoculation with Spinal Fluid L C Ager, Brooklyn

22 **Rapidly Advancing Pulmonary Tuberculosis**—The case reported by Hall was evidently one of a common type of tuberculosis A pneumococcus infection of the respiratory tract occurred in a child with tuberculosis largely confined to bronchial lymph nodes, the tuberculosis spread rapidly throughout the lungs and body The Roentgen ray made evident early the tuberculous lesions eliminating the diagnosis of simple bronchitis, influenza infection or bronchopneumonia It showed the progress of the disease from the hilus into the lobes, most marked in the right lower and the appearance of a cavity before these were evidenced by physical signs The von Pirquet test gave a marked reaction early in the disease before the patient failed It was faint as the child became weaker and absent a few days before death Tubercle bacilli were not found until late in the disease, when the diagnosis was already well established Then they were found first in the stools, later in the sputum

24 **Management of Enuresis**—The method of management of enuresis, whether it be diurnal or nocturnal, or both, that has given Newlin the best results, consists in the simple procedure of anticipating the involuntary act by a voluntary emptying of the bladder This is the usual accompaniment of any treatment, but, Newlin says, when carried out systematically, can preclude the use of drugs absolutely, it gives far better results than when the chief reliance is placed on medicines with only perfunctory instructions as to the actual management of the child itself This method of handling even obstinate cases of enuresis is rarely carried out systematically, but when it is so conducted gives almost invariably successful results The chief obstacle encountered is the difficulty of impressing on the mother or nurse the fact that unless the instructions are absolutely faithfully followed the result is failure

The nurse is given a sheet of paper with the hours of the day and night placed in a vertical row at the left-hand margin under the heading of the day of the week. If the enuresis occurs on an average of every two hours, she is instructed to put the child on the chamber every hour for the first twelve hours If she finds the clothing wet at any such time the hour is noted on the chart At night the child is lifted almost as frequently during the early hours, that is, up to 11 o'clock or midnight, after that every second hour is usually all that is necessary for the first night At the end of the first twenty-four hours she then either has a clear chart or one with several hours marked as indicating the time of the enuresis On the second day she is guided by her chart of the previous day, and she may extend the length of time between the voluntary urinations, always, however, anticipating the hours marked as "wet" on the day before, placing the child on the chamber at least a half hour before the time indicated

Bulletin of Johns Hopkins Hospital, Baltimore

November, XXVI, No 297, pp 367 390

26 *Studies on Cerebrospinal Fluid and Its Pathway Calcareous and Osseous Deposits in Arachnoidea H Cushing and L. H Weed, Boston
27 *Calcium Factor in Hemophilia A F Hess, New York
28 Bacteriologic Results in Chronic Leukemia and in Pseudoleukemia C H Bunting, Madison, Wis., and J L Yates, Milwaukee
29 Iconographic Notes on Girolamo Fracastoro A C Klebs, Baltimore
30 *Experimental Study of Factors Responsible for Noninfectious Bone Atrophy E G Grey and G L Carr, Boston
31 Origin of Lactic Acid Bacteria in Milk P F McGuire, Baltimore

26 **Calcareous and Osseous Deposits in Arachnoidea**—Cushing and Weed summarize the results of their study as follows Calcareous depositions in the form of psammoma bodies, or corpora amylacea of varying stages of development and of varying size, are of common occurrence in the arachnoidea of man and of the lower animals Associated with this process of calcification there is apt to occur a hyperplasia of the arachnoidal mesothelium The deposits of lime salts are apparently laid down in cell bodies and in this membrane can bear no relation to the blood vessels The occurrence of true bone formation in the arachnoid of man should be regarded as a similar phenomenon, except that one may consider the process of ossification to be proliferative rather than degenerative The so-called dural endotheliomas show histologically the same cellular arrangements with calcareous osseous depositions that are commonly found in the arachnoid and therefore take their origin in all probability from the mesothelium of this membrane

27 **Calcium Factor in Hemophilia**—Typical hereditary hemophilia is not associated with a deficiency to calcium Hess' investigations showed that the addition of calcium to the blood in vitro delays rather than hastens coagulation Furthermore, a deficiency could not be established by quantitative determinations of the calcium in the blood, and a metabolism study showed that the exchange of lime salts, as well as of numerous other inorganic as well as organic substances, differed in no way from normal

30 **Study of Factors Responsible for Noninfectious Bone Atrophy**—A destruction of the sensory nerves to a part according to Grey and Carr occasions no direct local atrophy of bone A destruction of the motor nerves, on the other hand, leads to a certain amount of atrophy This, however, is indirectly the result of inactivity of disuse and is directly proportional in extent to the degree of paralysis present in the part Local venous congestion leads directly to no recognizable changes in the structure of bone Local anemia due to injury to the arterial supply, except in an extreme degree, likewise occasions no bone atrophy so long as the part remains functionally active Inactivity atrophy may appear soon after immobilization of a limb—as early as the fourth or fifth day in rabbits It is probably due to a decrease or to an absence of the functional stimuli necessary to the normal nutrition of bone Immobilization retards the process of repair in bone injuries

Cleveland Medical Journal

September XIV No 9 pp 581 650

32 Branchiogenic Carcinoma Report of Case M L. Richardson, Cleveland
33 Epidemiology of Whooping Cough and Diphtheria in Cleveland in 1914 R. G Perkins Cleveland
34 Problems of Wounded Man in War D Marine, Cleveland

Journal of Laboratory and Clinical Medicine, St. Louis

November I No 2 pp 79 154

35 Present Status of Abderhalden Reaction and of Theory of So Called Abwehrfermente. J Bronfenbrenner, Pittsburgh
36 Protein Metabolism J J R Macleod Cleveland
37 *Treatment of Syphilis of Nervous System by Intradural Injections (Old Salvarsan) U J Wile, Ann Arbor, Mich
38 Pharmacology of Bronchial Asthma. D E Jackson, St Louis

37 Treatment of Syphilis of Nervous System.—Fifteen patients have been treated by this method by Wile None have suffered any ill *consequences* In all but two patients definite objective improvement could be noted in the spinal fluid With full allowance for the possible suggestive element there was nevertheless a marked subjective improvement in the majority of the cases Such improvement was not seen *to be transitory* but appears to be permanent Three patients have disappeared from observation but none of the remaining twelve have relapsed with regard to symptoms Four patients have been restored to usefulness and are making a livelihood which before their treatment they were unable to do The patients showing the most marked improvement were those suffering from early brain or cord syphilis but encouraging results were also noted in cases of tabes dorsalis No patient received over three injections but it seemed to the author that further treatment in cases in which improvement had occurred would be indicated

Journal of Medical Research, Boston

November XXXIII No 2 pp 147 322

39 Histologic Study of Internal Secretory Glands in Mice Bearing Spontaneous Tumors. G L. Rohdenburg and F D Bullock, New York
40 Vascular Changes Following Intravenous Injections of Fat and Cholesterin O Klotz Pittsburgh
41 *Spontaneous Primary Tumors of Liver in Mice Studies on Incidence and Inheritability of Spontaneous Tumors in Mice M Slye H F Holmes and H G Wells Chicago
42 *Influence of Exposure to Roentgen Rays on Formation of Antibodies. J P Simonds and H M Jones Chicago
43 *Effect of Injections of Benzol on Production of Antibodies J P Simonds and H M Jones Chicago
44 Studies in Experimental Transfusion R Ottenberg and W Thalhimer New York
45 *Bacteriologic Study of Epidemic of Septic Sore Throat C. Krumwiede Jr and E Valentine New York
46 *Method of Producing Tetanus Toxin. J F Anderson and J P Leake Washington, D C
47 Etiology of Protozoan Disease of Turkeys Known as Blackhead Enterohepatitis Typhlitis etc T Smith Boston.
48 Blastophthoric Effect of Chronic Lead Poisoning C V Weller Ann Arbor Mich
49 Direct Reading Potentiometer for Measuring and Recording Both Actual and Total Reaction of Solutions. W T Bovie Boston.

41 Spontaneous Tumors of Liver in Mice—Twenty-eight primary tumors of the liver were found by the authors in 10,000 mice of all ages dying natural deaths and carefully necropsied but one other case is recorded in the literature All were liver cell adenomas one showing malignant structure and multiple metastases in the lung, two with malignant structure without metastases, and the remainder exhibiting all degrees from probable malignancy to simple adenomas No tumors of bile duct type were found Sarcoma-like growths were found in six, but these are more probably granulomas No hemangiomas or other tumors were found There were three carcinomas secondary to mammary gland tumors and three secondary sarcomas None of the tumors seemed to be the result of cestode infection of the liver or other evident cause. The coexistence of liver tumors with other primary tumors is high there having been multiple tumors in ten of the twenty-eight cases, in three of these both tumors were hepatic in the other seven different organs were involved Only six secondary tumors were found in the liver, three being from mammary gland carcinomas, one from a mesenteric sarcoma, and two secondary osteosarcomas

42 Influence of Roentgen Rays on Antibody Formation—The effect of exposure to Roentgen rays on the production of different antibodies is summarized by Simonds and Jones as follows (a) The formation of agglutinins is appreciably lowered, although not so markedly as in the case of rabbits injected with benzol (b) The attempt to study bacteriolysins for typhoid bacilli was less satisfactory than in the case of other antibodies The authors' results do not warrant a positive statement, but the indications are that the production of bacteriolysins for *B typhosus* in their animals was not greatly interfered with by exposure to Roentgen rays (c) The opsonic content and the complement fixing power of the serum roentgenized rabbits did not differ appreciably from that of control animals

43 Injections of Benzol on Antibody Production—In the experiments detailed by Simonds and Jones rabbits were injected subcutaneously with a mixture of one part benzol and two parts olive oil The doses were, as a rule, so adjusted that each animal received approximately 1 c.c of benzol per kilogram of body weight A depression in the production of hemolysins agglutinins and opsonins was evident in the animals injected with benzol as compared with normal controls injected with the same antigen The depression was *most marked in the case of hemolysins and* least so in that of opsonins

45 Bacteriologic Study of Septic Sore Throat—The epidemic studied by Krumwiede and Valentine occurred during June 1914 in Rockville Center, Long Island, a village of 4 250 inhabitants It was soon evident that the common element among the infected persons was their milk supply Out of 232 cases 205 obtained their milk from one dairy Streptococci similar culturally and identical in their agglutination were isolated from cases of septic sore throat and from the udder of one cow, showing no evidence of mastitis, except the peculiar character of the milk from one quarter The bacteriologic as well as the epidemiologic facts almost certainly show that the infection was primarily of human origin In tracing the source of such an epidemic, the authors point out that the efforts should be towards finding cases of sore throat among those engaged in producing the milk not mastitis in the cow alone. If human streptococci are found in mastitis they are most likely secondary agents in an already existing inflammation due to bovine strains The streptococci in different epidemics differ culturally and those similar culturally differ in their immunity reactions Cultural similarity of strains from man and cattle is insufficient to prove their identity Cultural identity in every detail or immunologic identity is essential

46 Method of Producing Tetanus Toxin—Anderson and Leake place on record the method of making tetanus toxin which has been used with minor modification at the Hygienic Laboratory of the United States Public Health Service since 1905 and, at the suggestion of the laboratory, in most of the establishments manufacturing antitoxin subsequently At the Hygienic Laboratory the toxin is prepared for the purpose of standardization of tetanus antitoxin in accordance with the American method while in the antitoxin establishments it is prepared for the active immunization of horses The important points in the method are the method of preparation, freshness, and reaction of the medium, the preliminary cultivation, and the growth without the use of oil vacuum inert gas, or pyrogallate—a great advantage, the anaerobiasis is attained by inoculating liberally into liter flasks immediately after steaming For details the original article should be consulted

Journal of Parasitology, Urbana, Ill.

September II No 1 pp 1 50

50 Occurrence of Trypanoplasm Probably Trypanoplasma Borreli Laveran et Mesnil in Blood of Common Sucker Catostomus Commersonii J W Mavor Madison Wis
51 Two New Cases of Polyradiate Cestodes W D Foster, Washington D C
52 Sarcocystis Tenella Railliet. J W Scott
53 Egg Variation in Trematode Species W W Cort St. Paul Minn.
54 Some New Gregarine Parasites from Arthropoda. M E Watson Chicago
55 *Pneumonyssus Foxi* Nov Sp An Arachnoid Parasitic in Lung of Monkey (Macacus Rhesus.) F D Weidman.
56 Cestode Cysts from Muskrat. E. Linton Philadelphia

Journal-Lancet, Minneapolis

November 15, XXXV No 22, pp 619 648

57 *Subdiaphragmatic Abscess E S Judd, Rochester
58 Syphilis of Nervous System W A Jones, Minneapolis
59 Streptococcicosis H L Ulrich, Minneapolis
60 Convergent Strabismus, Its Causation and Treatment A E Johnson, Watertown, S D
61 Prostatectomy, with Special Reference to Preliminary and Post operative Treatment E C Robitshek, Minneapolis

57 **Subdiaphragmatic Abscess**—In the Mayo's series of thirty-six patients cited by Judd there were eleven deaths In almost every instance, death was due to an extension of the infection to the liver and to the formation of multiple abscesses in this organ From a review of these cases, it seems to Judd that better results will be attained (1) by efforts to make earlier diagnoses, (2) by being suspicious of any case that shows more sepsis than can be accounted for, and (3) by employing the aspirating-needle early When drainage has been established, it is important to maintain it until the infection has all disappeared and until there has been ample time for the cavity to become obliterated

Medical Record, New York

November 27 LXXXVIII No 22, pp 903 944

62 Study of Fifty Nine Thousand and Two Hundred and Seventy Exposures of Ordinary Life Insurance Showing Urinary Impairments at Time of Acceptance J B Ogden, New York
63 *Form of Typhus That Is Endemic in New York City N E Brill, New York
64 Value of Immunized Milk as Prophylactic and Remedy for Tuberculosis J Rosenberg, New York
65 Results of Salvarsan and Mercury in Eighteen Cases of Primary Syphilis J Constas, Washington, D C
66 Suction Tongue Depressor N E Titus, New York

63 Abstracted in The Journal, November 27, p 1945

Missouri State Medical Association Journal, St Louis

November XII No 11 pp 475 516

67 Intra Ocular Sarcoma, Report of Four Cases J H Thompson, Kansas City
68 Congenital Aphakia J W Sherer, Kansas City
69 Peripheral Vasomotor Changes in Shock W E Muns, Columbia
70 Some Types of Myocardial Disease F Fahlen, St Louis
71 Bone Regeneration G A Beedle, Kansas City
72 Diseases of Verumontanum L Bartels, St Louis
73 Practical Sterilizing Pocket Thermometer Case O H Brown, St Louis

New Mexico Medical Journal, Las Cruces

November XV No 2 pp 41 84

74 Gastric Symptoms in Relation to Abdominal Disease W Senger, Pueblo, Colo
75 Inguinal Hernia R W Corwin, Pueblo, Colo
76 Spontaneous Rupture of Hydronephrosis K D Lynch, El Paso, Texas
77 Modern Treatment of Fractures J R Espey, Trinidad, Colo

New York Medical Journal

November 27 CII No 22, pp 1073 1120

78 *Sanitary Study of Condensed Milk W H Park, M C Schroeder and P Bartholow, New York
79 Climatic Inducements for Overmature and Early Senescent J M Taylor, Philadelphia
80 Modern Infant Feeding G D Scott, New York
81 Enlargement of Thymus, Report of Case J Grossman, New York
82 Atrophic Rhinitis W Ferguson, New York
83 Hematuria in Renal Neoplasm C Denaclara, Palau, France
84 Nonsurgical Treatment of Exophthalmic Goiter I Bram, Philadelphia
85 Chronic Constipation in Infants J Epstein, New York

78 **Sanitary Study of Condensed Milk**—The authors summarize the results of their studies as follows The value of sweetened condensed milk depends on the care and cleanliness used in manufacture There is a want of evidence that the bacteria or chemical constituents are capable of affecting the health Only the use of the best quality of sweetened condensed milk is to be commended in the feeding of infants Sweetened condensed milk, when carefully prepared from whole milk, has special indications as an infant food They may be thus expressed Many infants are unable to digest the fat of cow's milk, even when two or three volumes of water are added In such cases the half digested curds of casein are vomited The change in these circumstances to sweetened condensed milk allays the vomiting These facts are well established clinically Sweetened condensed milk has generally a constipating effect The opposite view that it produces diarrhea seems to be wanting in evidence Clinical evidence agrees with Finkelstein's observation that the intestinal irritation caused by milk is an effect of the action of the liquid portion, when freed of fat, sugar, and protein Sugar appears to have a food value superior to fat, as shown by Hellesen

West Virginia Medical Journal, Wheeling

November, X No 5, pp 145 180

86 Uterine Displacements with Special Reference to Prolapse of Uterus and Vaginal Walls A P Butt, Davis
87 Valvular Lesions of Heart, Diagnosis, Prognosis and Treatment S D Hatfield, Iaeger
88 Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis R U Drinkard, Wheeling
89 Relation of Pathologic Tonsil to Systemic Infection C E Grimm St Marys
90 Treatment of Wounds of Mine Injuries and Sanitation of Mining Camps W A Lynott, Pittsburgh
91 Pericolic Membranes Etiology, Diagnosis and Treatment T K Oates, Martinsburg

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

September 25 II No 2856 pp 461 492

1 Surgery on Gallipoli Peninsula J Morley
2 Three Cases of Gunshot Wounds of Large Arteries, with Traumatic Aneurysm J A C Macewen
3 Treatment of Wounds in War E G Kennedy
4 Recrudescence of Local Sepsis in Completely Healed Wounds C J Bond
5 Trench Nephritis, Report of Five Cases. N Raw
6 Artificial Pneumothorax F C Coley
7 Case of Rotatory Nystagmus with Recovery Under Optical Treatment T S Barrie

November 13 II, No 2863 pp 697 736

8 *Clinical Aspects and Diagnosis of Paratyphoid J A Torrens and T H Whittington
9 Bacteriologic Experiences with Typhoidal Disease and Dysentery J C G Ledingham and W J Penfold
10 *Tetravaccine Typhoid Plus Paratyphoid A Plus Paratyphoid B Plus Cholera A Castellani and R W Mendelson
11 Paratyphoid "A" Fever A H Safford
12 Emetine Treatment of Amebic Dysentery G C Low
13 Case of Septicemia Treated by Intravenous Injection of Eusol J L Smith, J Ritchie and T Rettie
14 Wound Infections and Their Treatment A E Wright

8 **Diagnosis of Paratyphoid**—Torrens and Whittington found that there are eight symptoms which occur in at at least 20 per cent of the cases at the onset In order of frequency these are 1 Headache (85 per cent) 2 Diarrhea (55 per cent) 3 Abdominal pain (35 per cent) 4 Aching pains in the limbs (30 per cent) 5 Shivering (25 per cent) 6 Extreme general weakness (25 per cent) 7 Backache (25 per cent) 8 Epistaxis (20 per cent) Headache is usually vertical in distribution, though a migrainous type, especially severe behind the eyes, has been present in several cases of para A Abdominal pain is rarely severe or colicky and is usually generalized, and does not often last more than two or three days The initial diarrhea is rarely severe, being usually limited to three or four loose stools per diem Pain other than abdominal pain or headache is usually referred to the back or limbs Extreme general weakness is often sudden in its onset, and sometimes this and headache are the only symptoms Epistaxis is rarely volunteered by the patient as one of his symptoms While shivering is liable to occur in the course of any infection with the liberation of toxins or bacteria into the blood stream, yet the occurrence of repeated shivering attacks seems of special significance of the onset of paratyphoid This is especially true of paratyphoid A, in which onset, and in which it is liable to occur with rigors throughout the disease

Cough is complained of in nearly 20 per cent ,of the cases, and seems more common in para B, but is rarely troublesome Vomiting is far more common in paratyphoid than in typhoid This is especially so in para B cases, in which vomiting occurred in 17 per cent Dizziness and deafness occurred in 7 per cent of all cases Sore throat or hoarse voice as evidence of laryngitis or pharyngitis occurred only in 5 per cent of the cases, all those being cases of para B Temperature during the onset Patients in whom the onset was rapid have said that their temperatures were 102 to 103 when first taken Cases which have started in a hospital in which the patient was being treated for some wound, and in which the temperature was being taken as a routine measure show a rapid rise, the maximum usually being reached in forty-eight hours It seems fairly certain that the 'step-ladder' rise so frequently seen in typhoid is far from common in paratyphoid During the second week, in the average patient, the temperature ranges between 99.2 and 102.4 Of the cases analyzed 60 per cent showed this remittent type of fever, while about 20 per cent were intermittent A really steady temperature in the second week was only seen in 5 per cent of the cases, 70 per cent of all cases of para B and 40 per cent of para A are of twenty days' duration or less In about 30 per cent of all cases of each form the pyrexia lasts fifteen days or less In the average case the temperature in the second week and at the beginning of the third week does not reach as high as 103 Only about 35 per cent of all cases of paratyphoid ever reach 103, and only about 12 per cent reach as high as 104

The pulse is one of the most important aids in diagnosis The rate is uniformly slow as compared with the temperature A temperature of 102.5 with a pulse of 70 is characteristic and is more than significant of a group infection Without any apparent change in the general condition, the rate may be at one time 65 and at another 85 or 90, and, curiously, a high temperature may coincide with a low pulse rate and vice versa The quality of the pulse is characteristic and important There is a most marked softness or compressibility present The blood pressure in a small series of cases examined with the sphygmomanometer was found to vary from 80 to 100 mm Hg Spots are present in as many as 75 per cent of all cases at some time during the disease They appear in crops, and last three or four days, as in typhoid The spleen is either palpable or enlarged to percussion in nearly 60 per cent of cases, it can be felt in about 35 per cent of all cases some time during the course of the disease Examination of the heart is negative Examination of the lungs will show bronchitis in less than 30 per cent of the cases The central nervous system shows no constant abnormality

10 **Typhoid Plus Paratyphoid A Plus Paratyphoid B Plus Cholera.**—The number of individuals inoculated by Castellani and Mendelson with the tetravaccine amounts to 50,000 and more than 120,000 by colleagues The reactions were usually mild and consisted usually of a small area of redness, a slight local temperature and some tenderness General reactions were seldom complained of, and when inquired into revealed a slight headache and a general inaptitude These particulars were carefully looked into in all cases on the second inoculation The left arm is chosen, the skin over the insertion of the deltoid, and a quick stab, as though one were shaking a drop of ink from a pen results in placing the point of the needle at the exact depth The syringe is held in the right hand between thumb and index finger, while the tip of the ring finger is placed just above the point of the needle, acting as a check to the force applied No after-treatment, as massage or sealing the puncture, is used

The authors examined the blood of more than 100 individuals inoculated with the tetravaccine for agglutinins The individuals inoculated with the tetravaccine produce a large amount of agglutinins for typhoid, a fairly large amount of agglutinins for paratyphoid A and paratyphoid B, a certain amount for cholera, which varies between the limits 1 20 and 1 150 Comparing the results with those obtained in control individuals inoculated with typhoid, paratyphoid A, paratyphoid B and cholera the amount produced is not distinctly smaller There was no septic or other accident in any of the more than 50,000 men the authors have inoculated, this entailing more than 100,000 injections, nor any untoward accident observed by colleagues who inoculated in Serbia more than 120,000 men with the tetravaccine The inoculated persons develop protective substances for the four germs typhoid, paratyphoid A, paratyphoid B and cholera

Lancet, London

November 13 II No 4811 pp 1063 1120

15 Wound Infections and Their Treatment. A E Wright
16 *Nervous Affections of Sixth and Seventh Decades of Life J M Clarke
17 *Gunshot Injuries of Peripheral Nerves W Harris
18 Gunshot Injuries to Peripheral Nerves R H J Swan
19 Cases of Tetanus Like Spasm Localized to Wounded Limb R D Rudolf
20 Case of Oral Sepsis. A Abrahams.
21 Zinc in Potable Water J C Thresh

16 **Nervous Affections**—Turning to those affections more purely of nervous origin, Clarke says that the period from 50 to 70 compares favorably with that of either childhood and adolescence or the age from 25 to 50 In both the latter periods of life falls the incidence of the nervous diseases due to infections and intoxications from which the age after 50 is mostly exempt The main period of onset of the hereditary and familial diseases, those included under Gowers' designation of abiotrophy, occurs in childhood and adolescence while from 20 to 50, together with some tabiotrophic diseases whose onset is late, the nervous affections due to syphilis and alcohol are rife After 50 the chances of the occurrence of cerebrospinal syphilis are comparatively slight Lastly, the purely nervous diseases which are especially characteristic of this period of life are paralysis agitans, some of the combined scleroses of the spinal cord and certain muscular atrophies of central origin Clarke suggests that it is possible that some of these affections owe their origin to that process of premature senescence or defective vital endurance of certain neuronic systems known as abiotrophy, and that this pathologic process may occur at any age Paralysis agitans especially, in its narrow age incidence, uniformity of symptoms, progressive character and occasional familial tendency, suggests this mode of origin

17 **Gunshot Injuries of Peripheral Nerves**—The following is a summary of the points made by Harris The importance of an accurate history of the details of the wound or wounds and of the immediate effects A careful and methodical examination of the paralysis, both motor and sensory is necessary to determine whether it matches with the known anatomic distribution of one or more nerves, or of a portion of a plexus, or whether it resembles the phenomena produced in hysteria Careful charts of the sensory loss are more important than the presence of complete muscular paralysis with reaction of degeneration, in estimating the severity of the injury of a mixed nerve The various stimuli used in testing by hard or light pressure, pin-prick, scratch camel-hair brush or cottonwool, are tests of different system or fibers Hard pressure will still be perceived except in total interruption of the nerve conductivity by actual division or by its inclusion in dense scar Commencing recovery of sensation may in some cases be observed within a few days only of secondary suture of the nerve Variations, however, in the sensibility must be allowed for, as this may vary from day to day within narrow limits, or according as the limb is warm or cold

18 **Gunshot Injuries to Peripheral Nerves**—Swan has seen 63 cases of gunshot injury to peripheral nerves Of these cases 38 were operated on, involving the exploration of 41 individual nerves, for in 3 cases the injury involved two distinct nerves Of the 25 patients not operated on, 6 refused any operative treatment for conditions in which it was practically certain that a nerve was badly injured, in 3 it was deemed inadvisable to attempt any operation, and in 4 cases operation has been deferred until such time as the wounds made by the bullet have healed In the remaining 12 patients gradual improvement and recovery to function returned after an interval varying from two to twenty-four weeks after the injury Swan says that unless the symptoms point to a partial injury to the nerve he knows of no point to distinguish between complete nerve division and involvement in dense scar tissue He has operated on cases in

which there have been complete anesthesia and paralysis of the muscles supplied by the nerve and with complete reaction of degeneration, but in which he found the nerve undivided, but densely fixed by scar tissue to surrounding structures The anatomic lesion is of small moment, however, as operative treatment is required in either case, and the sooner it is done when asepsis can be guaranteed the better the prognosis for the patient In cases of complete nerve division there is no question of the procedure to adopt —the ends must be dissected free, the bulbous proximal end removed until nerve bundles can be seen, a small part of the distal end resected, and the two ends accurately joined tension on the nerve being relieved by stretching the nerve and by suitable position of the limb In cases in which the nerve is firmly involved in scar tissue, and which on dissection is found to be dense and thickened, the best thing to do, if nerve will allow, is to resect the fibrous portion and join the two ends by accurate suture

Bulletin de l'Académie de Médecine, Paris

October 19 LXXIV No 42, pp 429 463

22 *Diagnostic Importance of the Modifications in the Tendon Reflexes Under the Influence of Chloroform J Babinski and A Fremont.
23 The Children Born from Rape (Le viol de guerre et la protection de l enfance.) H Henrot
24 *Intubation to Maintain the Circulation in Wounded Artery (De l'intubation dans les plaies des grosses artères) T Tuffier
25 Bacteriologic Examination of Beer (Les bieres des Flandres) L Roussel and Others

22 **Differential Importance of Modification of Reflexes by Chloroform**—Babinski says that the works published on this subject to date discuss merely the physiologic behavior of the reflexes under the influence of chloroform He and his co-worker, on the other hand, present evidence to show that the behavior of the reflexes has differential importance in abnormal conditions It affords an objective means of distinguishing between actual nervous disease and hysteria, for one thing, and between different forms of nervous disease In six wounded soldiers whose cases are described in detail, the asymmetric accentuation of the reflexes, their asymmetric disappearance and asymmetric reappearance, confirmed the assumption of organic disturbance The survival of the elective exaggeration of the tendon reflexes, even during the phase of relaxation of the muscles, reveals the extent of the disturbance in the central nervous system resulting from the peripheral lesion It explains the tenacity of the disturbance and its clinical importance, justifying the patient's complaints and the functional disturbances, when otherwise there might be suspicion of malingering

24 Summarized in the Paris Letter, November 27, p 1929

Paris Médical

September 11, V, No 18, pp 305 320

26 The Triple Vaccine for Typhoid Fever A Chantemesse
27 Extension for Fractured Humerus R Gregoire
28 Service for Dentistry and Protheses for the Active Army (Stomatologie au armees) Gaumerais
29 Gage for the Excursions of Joints. (Le compas d'angle destine a mesurer le degre d'extension et de flexion des articulations) P Guillaumet
30 Improvised Douche Apparatus L Binet

September 18, No 19, pp 321 336

31 *Decalcification of Bones in Paralyzed Members, Both Organic and Neuropathic. H Claude and R Porak
32 Treatment of Suppurating Wounds in War J Andrieu.
33 Simplified Stereoroentgenography B de Laborie

September 25 Nos 20 21 pp 337 372

34 *Wounds of the Eyes and Orbit in War F Terrien
35 Inferior Hemianopsia from Projectile in Left Lower Side of the Occiput E Ginestous and P Bernard
36 War Wounds of Larynx and Trachea Guisez.
37 The Ear and Traumatisms of War (Appareil auditif et traumatisme de guerre) M Grivot

31 **Decalcification of Bones in Paralysis**—A number of typical cases are described and illustrated The findings are tabulated in 15 cases of paralysis of the hand without any signs of neuritis, also in 4 of paralysis from a direct wound of the brachial plexus, 3 of the ulnar, 4 of the median, 2 of the radial and 2 involving both ulnar and median nerves Decalcification was evident in all the groups, and hence it cannot be regarded as a sign of a lesion of any nerve, as it was often as pronounced in the neuropathic and hysteric cases or after immobilization for fracture as when the nerve had been severed The latter alone may entail osteoporosis, but it is equally liable to develop from the lack of exercise during immobilization, from disturbances in the circulation in the region, or from a constitutional predisposition It occurs in the same way as wasting of muscles or local sweating or hyperkeratosis in cases of disuse of a member from any neuropathic or organic cause

34 **Injuries of the Eyes in War**—Terrien discusses the direct injury of the eyeball or orbit or both from projectiles, indirect injury from a wound near or from the shock of an explosion without direct injury of the tissues, and, finally, visual disturbances of psychic origin A number of illustrations are given to illustrate technical points in repair In one of the cases illustrated a flap was taken from the thigh to make a new culdesac, permitting the wearing of an artificial eye In some cases men knocked down by an explosion, without direct injury, were totally blind when they regained consciousness and some could not hear and others had aphasia In others both vision and hearing were slightly impaired He has encountered eighteen cases of these visual disturbances Vision began soon to improve and gradually returned to its former status except for some slight reduction of visual acuity and difficulty in focussing objects The immediate blindness is evidently the consequence of the concussion from the explosion and conditions progressively right themselves When the disturbances drag along without tendency to improve, a psychoneurosis may be assumed and treatment instituted on this basis

Revue Médicale de la Suisse Romande, Geneva

October XXXV, No 10, pp 533 604

38 Supplementary Measures to Improve the Condition of the Wounded (Le traitement complementaire des blessures de guerre et les services de physiotherapie) Long
39 *Joint Manifestations of Hemophilia (De l arthropathie hemophilique) C M Du Pan
40 Wounds of the Spine (Des lesions vertebrales dans la chirurgie de guerre) A Jentzer
41 Favorable Experiences with Heliotherapy for Pulmonary Tuberculosis Meyer
42 Enterogenous Albuminuria in Pregnant Woman D Christidès and P Besse

39 **Hemophilic Joint Affections**—Du Pan relates that a boy of 15 was brought to the hospital on account of a very painful tumor of the ankle which seemed to be a sarcoma on the point of ulcerating, except that sarcomas are not so agonizingly painful The tibia was not tender, and although there were local heat and fever, yet there was no involvement of glands, no lymphangitis or fluctuation A small incision brought dark blood but no pus, and the little cut bled continuously for three days, confirming the final assumption of hemophilia Under calcium chlorid and diphtheria antitoxin the oozing of blood was finally arrested His family showed the usual skipping of the second generation and reappearance of the hemophilia in the sons of the daughters, three of the five sons being pronounced hemophiliacs

In treatment, the main thing is to suspect the hemophilia instead of taking the joint trouble for acute articular rheumatism or a tuberculous process, as is too often done Du Pan declares that this error in diagnosis has often proved fatal, he cites various cases in which puncture of the joint for supposed hydrarthrosis has caused bleeding to death In Poncet's case, the fatal hemorrhage followed application of the actual cautery at several points König has reported two cases with fatal outcome after resection of the knee, and the list is a long one of these sad blunders in diagnosis

The blood accumulating in the joint causes sudden pain and swelling and the limb is held as in acute rheumatism The region feels hot and there may be fever, but the skin keeps its normal color throughout the whole trouble There are, as a rule, several successive attacks involving different joints, but mostly the knee or elbow, one at a time, with or without some slight local trauma preceding The hemarthrosis may be entirely absorbed, but usually it persists and irritates the joint, with chronic arthritis as the result In the second phase this arthritis resembles in every respect a white swelling, there is thickening of the synovialis, impotence of the limb and wasting of muscle The pain is less in this stage, the swelling becomes more general, and the culdesacs are distended, but the local heat does not increase There is elastic fluctuation in the synovial culdesacs, as with a tuberculous process, and partial ankylosis develops After the inflammation has subsided, insidious destruction may continue, but there is never an abscess or fistula and never any enlargement of glands from hemophilia alone The sudden onset excludes malignant disease but hematomas in muscle may be taken for cold abscesses and incision lead to fatal hemorrhage Submucosa hemorrhages in pharynx and glottis in a second case reported were mistaken for Ludwig's angina or diphtheria In Du Pan's first case, a subperiosteal hemorrhage, the length of the thigh had been mistaken for phlebitis Hemophilic hemorrhage in the stomach has often been treated as for a bleeding ulcer, and, from the lungs, for pulmonary tuberculosis

The family antecedents and tests of the coagulating power of the blood will reveal the tendency to hemophilia Its first manifestations generally appear before the age of 2 and the hemophiliacs generally outgrow the tendency by 22 It very rarely happens that a hemophiliac succumbs to hemorrhage after 22 The most threatening hemorrhages are generally during teething or puberty Fatal epistaxis carries off fully 50 per cent of the hemophiliacs Others have succumbed to hemorrhage from the gums, lungs, kidneys etc , two brothers died from conjunctival hemorrhage The skin covering a hematoma is stretched shiny, and bluish or black, with a peripheral red zone These hematomas never suppurate but the blood coagulated in them may undergo calcareous infiltration The literature on hemophilia and theories as to its mechanism are discussed in detail

Horse serum to date has proved more effectual than anything else in treatment of hemophilia but its action is only transient Keller found that the coagulation of the blood in women did not seem to be affected by removal of both ovaries so that the lack of ovarian secretion cannot be the primary cause of hemophilia Ovarian treatment has been tried but with no appreciable results With a recent hemarthrosis immobilization and compression with a cotton pad protect the joint and favor absorption When the coagulating time has been reduced by general treatment it may be possible to incise and remove the clots distending the joint and thus ward off chronic arthritis In the chronic stage we are disarmed No one is justified in operating to correct deformity or ankylosis in a hemophiliac unless he has reached adult age, and it has been ascertained that the blood coagulates in an approximately normal manner In hemophiliac families the children should not have their teeth pulled but vaccination has never been known to bring on hemorrhage The hemophiliac should select a sedentary occupation

Correspondenz-Blatt fur Schweizer Aerzte, Basel

October 30 XLV No 44 pp 1377 1408

43 *Prevalence of Atherosclerosis S Saltykow
44 The Experiences at Bern with Salvarsan to Date. (Unsere Erfahrungen mit Salvarsan.) O Nageli Commenced in No 42

43 **Prevalence of Atherosclerosis**—Saltykow accepts as evidence of atherosclerosis even the minutest yellow patches visible on the heart valves or intima of the arteries He has been searching for them at necropsies, and reports that he found them in 77.5 per cent of the total 1,200 cadavers examined Excluding all infants less than 3 months old, the proportion was 91 5 per cent Above the age of 8 every cadaver presented evidence of atherosclerosis to a greater or less extent.

Deutsche medizinische Wochenschrift, Berlin

October 28 XLI No 44 pp 1297 1324

45 Hunger (Ueber die Hungerempfindung) L. R. Muller
46 Combined Treatment of Syphilis (Ueber Salvarsannatrium und die kombinierte Quecksilbersalvarsanbehandlung) E. Hoffmann
47 Bacteriologic Diagnosis of Cholera (Die bakteriologische Choleradiagnose, unter bes Berucksichtigung der von Aronson und Lange neuerdings angegebenen Choleranahrboden) E Botticher
48 *Appearance of Immature Leukocytes in the Blood in Infectious Diseases. (Auftreten unreifer Leukozyten im Blut bei Infektionskrankheiten) B Photakis To be continued
49 Chronic Pancreatitis. M Einhorn To be concluded
50 *Alcoholic Polyneuritis with Paralysis of Left Side of Diaphragm and Left Vocal Cord W Loffler
51 *Exposure to Tuberculosis in Childhood as Factor in Tuberculosis Later (Ueber die Gefahrdung von Kindern durch tuberkulose Ansteckung) E Bergman
52 Practical Experiences with Furstenau's Intensimeter F M Meyer
53 * Scrofula' in Adults. (Zur Skrofulosefrage) A. Bauer

48 **The Appearance of Immature Leukocytes in the Blood**—Photakis tabulates the blood findings in thirty-two cases of various acute infectious diseases to call attention to the importance for the prognosis of the appearance of immature leukocytes in the blood He found the immature forms numerous in five eighths of his cases, and these were all the severer ones This finding shows the toxic action on the bone-marrow of the infectious agent, and thus serves more or less as an index of the intensity of the intoxication The irritation of the bone marrow is manifested first by a neutrophil leukocytosis without immature forms, then metamyelocytes appear, then, along with them appear myelocytes and promyelocytes, indicating the progressive phases of the irritation In the severer infections, especially with sepsis all the immature forms are encountered, down to myeloblasts as in the leukemic blood picture The internal nuclear structure of the immature cells takes the stain differently from ripe cells, it is amblychromatic instead of the trachychromatic structure of the nucleus of the maturer cells By the response to Pappenheim's staining technic (May — Grünwald — Giemsa) it is possible to differentiate each cell according to its age and maturity, and thus estimate to a certain degree the severity of the infection

50 **Alcoholic Polyneuritis**—The neuritis was accompanied with paralysis of the diaphragm and vocal cord on left side The patient was a robust hotel-keeper of 29, and the nerves affected with paralysis were those which run along together in the neck on the left side Nothing could be found to explain this localized paralysis except alcoholism, the attenuation of the reflexes and the reaction of degeneration indicated a peripheral nervous trouble The paralysis of the phrenic nerve rapidly subsided The diaphragm was soon working properly, but the paralysis of the left vocal cord radial and peroneal nerves persisted for some time, but finally all retrogressed to a complete cure, except that there is still some slight paresis of both peroneal nerves This prompt recovery is of special interest as, usually, polyneuritis involving the vagus and phrenic nerves is considered very dangerous on account of the danger of fatal arrest of respiration

51 This article was summarized recently, November 6, page 1686, when it appeared in a Scandinavian journal

53 **"Scrofula" in Adults**—Bauer protests that the clinical picture which used to be called scrofula" is by no means restricted to children It occurs comparatively often in adults but unfortunately it is seldom diagnosed, and it fails to get proper treatment He has encountered adults with the typical cheesy glands in the neck and eczematous conjunctivitis, who were past 50 and had never had their lungs examined Knowledge of the possibility of scrofula in adults is especially important for lung specialists He refers in particular to the article by Schelble, on scrofula," reviewed in these columns page 1683, abstract 71, which makes no mention of scrofula in adults

Münchener medizinische Wochenschrift, Munich

October 26 LXII No 43 pp 1453 1488

54 *Treatment of Weak Vision in One Eye. (Ueber Behandlung einseitiger Schwachsichtigkeit.) L. Heine.
55 Development of Organs in Response to Work Demanded of Them. (Zur Frage Arbeitsleistung und Organentwicklung) F Kulbs
56 Neosalvarsan in Treatment of Tertian Malaria. A. H Vandenhoff
57 Artificial Sheath for Nerves after Suture and Neurolyses. (Galalith zur Tubulisation der Nerven nach Neurolysen und Nervennahten.) S Auerbach.

58 Nitra Lamp for Radiotherapy H L Heusner
59 Hygiene in the Camps of Prisoners of War (Hygienische Erfahrungen bei Kriegsgefangenen) G Seiffert
60 *Public Assistance for the Poor and Repression of Drunkenness (Armengesetz und Trunksuchtsbekämpfung) Rupprecht
61 Open Puncture of the Pleura (Einige Bemerkungen zur "offenen Pleurapunktion" nach Adolf Schmidt) L Spengler
62 Gunshot and Shell Wounds of Spine and Spinal Cord (Schussverletzungen des Rückenmarks und der Wirbelsaule) P Frangenheim
63 Abscess of the Brain (Zur Therapie des Hirnabszesses) P Manasse
64 Plastic Operation on the Dura after Grazing Wound of the Skull (Duraplastik bei Rinnenschuss am Schadel) E Streissler
65 *Encephalolysis for Traumatic Epilepsy and Headache O Witzel
66 Fitness for Military Service of Men with Heart Disease (Zur Beurteilung der Kriegsverwendungsfahigkeit unserer Herzkranken) F Adolph
67 Immediate Emergency Removal of Injured Eye (Ueber Enukleation und Exenteration verletzter Augen im Felde) R Deutschmann
68 *Management of Operative Infection (Finger und Handinfektion bei Aerzten) L Heidenhain
69 Amputation Stumps and Immediate Protheses. K Nieny

54 **To Strengthen Unilateral Weak Vision**—Heine relates that a reliable and intelligent man, now 57, as a child could read only the headings in the newspaper with one of his eyes The other eye was apparently normal, and he found that he could see better with the weak eye by looking through his partly closed fist By systematically exercising the eye in this way, vision materially improved and the benefit was permanent Bandaging the better eye for a few hours each day is also liable to strengthen the weak vision in one eye, Heine has witnessed the transformation of unilateral strabismus into the alternating form in children In one boy of 8 tenotomy was done on the right eye for convergent squint Vision in this eye had been 1/30, but in a week it was 1/4, and in another fortnight nearly normal, but in binocular vision it was still defective In a large number of cases of supposed congenital weakness of vision in one eye, he found that the eye could see better through a narrow opening or slit In many the visual acuity increased from 6/30 to 6/18 by the use of the slit, and he thinks that systematic exercises of this kind might yield material benefit The stenopaeic hole or slit may help more than the best glasses, especially with congenital amblyopia He relates a few typical cases and expatiates on various technical points to bear in mind

65 **Adhesion of Nerve or Brain to Cicatrix Factor in Neuralgia and Traumatic Epilepsy**—Witzel long ago pointed out that the agonizing neuralgia after amputation was due to cicatricial incarceration of the end of the nerve The nerve should be divided high enough up to prevent this being possible His experience with wounds of the skull shows similar conditions here, the cicatricial tissue grows to the brain and induces traumatic epilepsy or headache This can be avoided or cured by separating the brain tissue and pushing it down, cutting out the cicatricial tissue at the site of the wound, and introducing a flap of fat under the dura as a cover to protect the brain He gives three illustrations of the exact technic The surface of the brain is smoothed off, but without extensive extirpation of the cicatricial tissue The flap of fat is taken from the thigh and it is cut twice as large as the gap in the skull, so it can be pushed far back under the skull all around, between the brain and the dura The fat side is turned toward the brain, the fascia side upward No attempt is made to fill the gap in the skull by a plastic operation, in fact, this would militate against the success of the encephalolysis

68 **An Imperative Warning to Physicians and Surgeons**—Heidenhain relates that from his student days he has always heeded Billroth's warning that in case of an operative infection the poison is much less apt to spread if the limb is kept perfectly still He has cut and scratched himself at operations numbers of times in the course of his long practice, but has never had any ill effects from them, as he has always made a point of wearing the arm in a sling for twenty-four or forty-eight hours, with a small moist compress over the wound to keep it from sticking He always gave up all work during this time and had others help him to dress and undress, and even help to feed him He escaped all ill effects so constantly that he began to think he was immune Not many years ago he dressed a small operative cut on the hand of a young pathologist and tried to impress on him the necessity of refraining to use his arm for two days Heidenhain then left town for a week, on his return he learned that the young man was dead He had worn the sling for half a day and then had gone swimming A chill that night was followed by fatal sepsis

Heidenhain's recent experience has confirmed him still more irrevocably in his conviction of the imperative necessity for absolute repose for the limb in these cases He cut his middle finger a trifle in operating an empyema The cut did not go below the papillary layer of the skin and he kept his hand in a sling in going his rounds, but that evening, pressed with work, he used the typewriter for an hour The spot became painful then and the next morning a subcutaneous phlegmon developed, requiring extensive incisions, and three weeks elapsed before it healed and three more before function was regained His many years of freedom while he kept the injured limb still, and his serious trouble the one time he failed to keep it still, testify to the soundness of Billroth's advice to keep the limb immovable for two days

Therapeutische Monatshefte, Berlin

October XXIX, No 10, pp 533 588

70 Cholera G L Dreyfus
71 Present Status of Treatment of Pneumonia A Fraenkel
72 Thorium X in Treatment of Certain Skin Diseases J Jadassohn
73 Hydrochloric Acid and Charcoal in Treatment of Gastrogenous Diarrhea O Porges
74 An Arsenical Alkaline Mineral Water in Treatment of Children (Erfahrungen uber den therapeutischen Wert der Guberquelle bei Kindern) M L Mayerhofer and O Schey
75 Salicylic Acid in Treatment of Suppurative Affections of the Skin (Die Behandlung der Furunkel und anderer eitriger Hauterkrankungen mit Salizylsaure) H Berkenbusch
76 *Restrictions on Advertising of Proprietaries to the Public (Oeffentliche Ankundigung von Arzneimitteln) (Editorial)
77 *The Manufacturing Chemists and the Medical Profession (Pharmazeutische Industrie und Aerztestand) (Editorial)
78 Pharmacist Protests against Restrictions on the Dispensing of Certain Potent Drugs without a Prescription (Die Vorschriften über die Abgabe starkwirkender Arzneimittel) (Editorial)

76 **Restrictions as to Advertising of Proprietaries**—The military authorities in the state of Hannover have issued a decree along much the same lines as our *Pure Food and Drugs Act*, so far as the advertising is concerned Our exchange quotes the decree with approval and then also asks why such a decree is promulgated and enforced only while the state is under martial law Each of the provisions, it emphasizes, is fully as much to the advantage of the public health during peace as during war times

77 **The Manufacturing Chemists and the Medical Profession**—Two advertisements which recently appeared in German newspapers are reproduced with the comment that they afford opportunity for congratulating the medical profession anew on the high opinion held by the manufacturing chemists of professional honor among physicians

The first reads "Physician Wanted A remunerative and convenient country practice with sickness insurance societies is open in southern Hannover for immediate possession to young physician who gives the preference to the original preparations of manufacturing chemists"

The second reads "Physician Wanted What physician, one with the title of professor preferred, will father a new pharmaceutical tested by physicians with good results?"

Our exchange remarks that the fact that such demands can be publicly voiced suggests that there are in our ranks some black sheep who will stoop to dally with the sordid writers of the first advertisement, or father the child in the foisting procedure aimed at in the other

Wiener klinische Wochenschrift, Vienna

October 21 XXVIII, No 42, pp 1129 1152

79 Wounds and Contusions of the Kidneys (Kriegsverletzungen der Niere) R Lichtenstern
80 *Vaccination against Dysentery (Ruhrschutzimpfung) K. Hever and F Lucksch.

81 *Carbohydrate Fermentation in Stomach with Normal Motor Function (Gibt es eine Kohlehydratgärung im motorisch intakten Magen?) P Saxl
82 *Typhoid Gastritis. S Plaschkes
83 Wounds of Cranial Nerves. (Schussverletzungen der Hirnnerven) O Ausch
84 Volvulus and Gangrene of Meckel's Diverticulum R Monti
85 Adapting Farm Wagons for Carrying the Wounded A Weiss

80 **Vaccination Against Dysentery**—There was a mortality of 19 4 per cent in the sixty-seven cases of dysentery in a small town, all in about one month Then all the sick were sent to a special hospital Search was made for carriers in the infected houses and several were found and sent away also All the adults left were inoculated with a polyvalent vaccine, a total of 342 persons out of a population of 800 About 243 were inoculated twice The reaction was always mild, generally merely a little local redness, swelling and painfulness A few had headache, and there was diarrhea for a few days in some In exceptional cases there was a little fever, with a chill, the day of the inoculation The fifty one children over 4 years old, in the infected houses, were all given an injection of polyvalent immune serum The epidemic was promptly arrested

82 **Typhoid Gastritis**—Plaschkes examined the stomach content after a test breakfast in large numbers of soldiers with typhoid restricting his research to those whose fever had subsided He found evidences of severe gastritis with impairment of motor functioning and digestive power in all but 4 In only these 4 of the total 14 with pronounced gastritis was the acidity normal, in 3 there was no free acid and in 7 it was abnormally low One had severe urticaria and all had abnormally large amounts of mucus He examined the stomach content from numbers of other patients with dysentery or paratyphoid, finding conditions in regard to the acidity practically normal There is reason to assume, therefore he says, that the gastritis of typhoid is peculiar to this disease Tests of typhoid bacilli in vitro showed that their proliferation was checked by gastric juice On the other hand the finding that the overwhelming majority of typhoid patients have a specific gastritis, persisting into convalescence is surely an indication to supply such patients with the lacking acid and the diet should be that given in other forms of gastritis in small frequent meals The rapid progress in his cases when food of this kind was given, with hydrochloric acid confirms the practical importance of these views They also suggest that infection does not necessarily always occur through the stomach Typhoid preceded cholera in 44 cases recently reported by Walko, but no instance is known in which typhoid followed on cholera In prophylaxis of cholera therefore the systematic giving of hydrochloric acid far into convalescence of typhoid may prove important.

Zentralblatt für Chirurgie, Leipzig

October 30 XLII No 44 pp 785-800

86 Siphon Drainage of Stomach through Fistula in Conditions of Atony in Stomach and Intestines. (Die Magenfistel mit Heberdrainage.) H Gross.

Zentralblatt für Gynakologie, Leipzig

October 30 XXXIX No 44 pp 763 778

87 *The Transperitoneal is the Preferable Technic for Cesarean Section (Extraperitonealer oder transperitonealer Kaiserschnitt?) K. Baisch.

87 **Cesarean Section in the Cervix**—Baisch relates that none of the eleven women whom he has delivered by extraperitoneal cesarean section behaved afterward as if there had been a laparotomy There was no tendency to paralysis of the bowels Recovery was amazingly simple and rapid in comparison to the convalescence after classic cesarean section In a twelfth patient he renounced the extraperitoneal technic because the woman had been laparotomized twice once for extra-uterine pregnancy and once for postoperative hernia In another case sterilization had to be done In both these cases the incision was low in the cervix, opening up the peritoneum widely Recovery was simple and rapid in both, as also in the seventeen following cases of transperitoneal cervical cesarean section

The incision, 10 cm long is made on the linea alba, through skin and peritoneum, and the uterus is opened on the median line in the thin and stretched lower segment No attempt is made to separate the bladder, or to make the incision in the peritoneum transverse, or to loosen up the peritoneum If necessary to tampon the uterus, after extraction of the child, the tampon is brought out through the vagina No attempt is made to drain the abdominal cavity either through the abdominal wall or the vagina The distended uterus holds the intestines out of the way so they do not present at all, and any fluids from the uterus are soaked up by two flat sponges wrapped in gauze compresses and worked down between the uterus and the abdominal walls The incision in the uterus is reenforced double with peritoneum sutured over the uterus suture, and this is covered with omentum This prevents any escape of uterus contents into the abdominal cavity By making the incision in the uterus in the most stretched segment, the coaptation and suturing of the thin walls proceed with special ease, and during the involution of the organ there is no traction or pulling aside of the walls The fold of peritoneum in that region is so voluminous that it can be laid in a double fold over the suture in the uterus wall, there is not such an excess of peritoneum in the fundus region, so this is impossible elsewhere Conditions therefore permit as simple and rapid recovery as after the extraperitoneal technic

Only thirteen of the total nineteen cases treated by this transperitoneal technic were "clean" cases The others had been repeatedly examined by midwife or obstetrician, without gloves and in several the membranes had ruptured twelve, twenty or twenty-four hours before Two of the women were already slightly febrile and the fluids in the uterus were fetid Labor had dragged along for days in many cases, in two primiparas of 40, seventy hours had elapsed since the birth process had begun, and with several others, thirty or forty hours had elapsed In every instance the puerperium was normal in every particular, although the conditions were in many of the cases less favorable than in the extraperitoneal series In the two febrile cases, perforation of the living child had even been contemplated The children were all delivered alive but one died from an intracranial hemorrhage, the operation had evidently come too late in this case No high forceps, prophylactic version, premature delivery or a pelvis enlarging operation was required in any of the cases The operation was done on account of contracted pelvis, rigid birth passage in elderly primiparae, cicatricial atresia of the vagina, etc Eight of the women were allowed to leave the clinic the tenth or eleventh day The transperitoneal technic thus proved to have all the advantages of the extraperitoneal method and to surpass it in some respects

Gazzetta degli Ospedali e delle Cliniche, Milan

October 27 XXXVI No 74 pp 1153 1168

88 Localization of Metal Bodies in the Tissues with Electrovibrator V Maragliano

Policlinico, Rome

October 31 XXII No 44 pp 1469 1504

89 Acute Inflammation of the Liver (Contributo clinico allo studio del cosidetto fegato infettivo acuto) G A. Pietri.
90 Treatment of Purulent Pleurisy M Mitra

Riforma Medica, Naples

October 30 XXXI No 44 pp 1205 1232

91 Treatment of Arrhythmias III (Terapia delle aritmie. Aritmie batmotrope disordini di eccitabilita.) G Rummo
92 Leishmania Anemia Two Cases. (Contributo clinico ed anatomo-patologico allo studio dell anemia da Leishmania) A Fagiuoli. Commenced in No 43
93 Primary Perithelioma of Lymph Glands. G D Oria. To be continued

Brazil-Medico, Rio de Janeiro

October 16 XXIX No 39 pp 305 312

94 *Possible Mycotic Origin of Leukemia (Pesquizas etiologicas na leucemia) E Dias
95 Epidemic Cerebrospinal Meningitis. Travers Jr
96 Tuberculosis in Parturients. (Subsidio ao estudo da tuberculose na puerperalidade.) A. Farani. To be continued.

October 23 No 40 pp 313 320

97 Classification of Siphonaphtherus in Brazil (Notas de syphonapterologia) R. de A. Cunha.
98 Typhoidal Condition in Chronic Malaria. (Typhose palustre) A. A. da Matta.

94 **Leukemia a Mycosis?**—Dias found what he calls a bacilliform germ with pronounced polymorphism in two cases of severe myeloid leukemia with extreme enlargement of the spleen He succeeded in inducing in animals, inoculated with the germ, a progressive and peculiar splenomegaly with enlargement of glands The facts observed suggest that the germ in question has some etiologic connection with the myeloid leukemia, suggesting a possible mycosis as the origin of the trouble The whites numbered 100,000 and 244,000 in the two cases The animals were inoculated with venous blood and with the products of punctures of the spleen Other animals inoculated with spleen tissue from these also developed the same progressive enlargement of spleen and glands and other signs of septicemia

Russkiy Vrach, Petrograd

XIV, No 38 pp 889 912

99 *The Action of Peptone on the Heart, Vessels and Blood Pressure S A. Pissemsky
100 *Etiology of Multiple Neuritis N I Leporsky
101 *Serum Sickness at the Pediatric Clinic in Moscow, *1904 1913* O I Molchanova
102 *Intestinal Digestion in Man after Excision of a Large Portion of Lower Intestine N A Gurevich
103 *Cholera and Amebic Dysentery V L Yakimoff and A P Demidoff
104 *Treatment of Sciatica with Rectal Saline Infusion by the Drop Method N A Gubin

99 **Action of Peptone on the Heart, Vessels and Blood Pressure**—Pissemsky studied the action of peptone on the isolated heart, coronary vessels, peripheral arteries, and the vessels of the isolated intestines and kidneys of rabbits He used mostly Witte's peptone, but also peptone prepared from albumin and blood The substance was passed through the vessels in solutions of 1 200, 1 1,000 and 1 10,000 The latter two solutions caused weakening of cardiac contractions, while stronger solutions (1 200) stimulated the heart to contract, the cardiac rhythm remaining uninfluenced Strong solutions (1 200) also produced marked dilatation of the coronary arteries The same occurred, but was transient, with weaker solutions, or the weaker solutions showed no effect The action of the peptone on the peripheral vessels was studied on rabbit's ears with the method of Kravkoff The action was vasoconstricting with all concentrations and with any kind of peptone However, the arteries of isolated intestines showed dilatation from large doses, but weak solutions had no effect Somewhat similar was the action of peptone on the vessels of the isolated kidney The blood pressure (0 5 gm peptone to one kilogram body weight) either remained unchanged, or rose, contrary to what may be observed in dogs in which the same doses cause a fall in the blood pressure

100 **Multiple Neuritis from Tapeworm**—Leporsky collected from the material of the University clinic of Dorpat sixty-four cases of tapeworm *(Bothriocephalus latus)* observed in five years Of these sixty-four cases, fifty-one showed more or less marked involvement of the nervous system in the form of polyneuritis, which in 14 per cent of the cases was severe He gives histories of three cases of polyneuritis in which no other explanation for the polyneuritis except this parasite could be found With the expulsion of the worm there was immediate improvement Leporsky is of the opinion that a toxin is formed in the intestines, whence it penetrates into the nervous system, causing various central and peripheral nerve disorders, such as chorea, epilepsy, neuralgia, and multiple neuritis A polyneuritis of this etiology might be called "enterotoxic polyneuritis" Sometimes no definite nerve symptoms are produced, but merely general complaints of weakness, and of pain in the joints and muscles These symptoms are usually taken for rheumatism, when they are in reality due to the presence of the tapeworm With the expulsion of the latter these rheumatoid pains disappear at once

101 **Serum Sickness and Allied Phenomena**—Molchanova found so-called serum phenomena, such as urticaria, fever, adenitis, etc, in 56 7 per cent of the patients given diphtheria antitoxin, and in 64 3 per cent of those treated with antistreptococcus serum for scarlet fever In those cases in which the antitoxin or serum for scarlet fever had been injected more than once, such phenomena were present in 100 per cent, but when the antitoxin was injected for the first time, complications were noted in 47 5 per cent and in 59 6 per cent in the scarlet fever cases The first sign of the serum disease was swelling of a gland in the inguinal region, as the serum was usually injected in the abdominal skin or in the gluteal muscles The adenitis very seldom appeared in the axilla or neck, and it was the latest of the serum phenomena to disappear The most frequent sign, however, was a rash in the form of urticaria, erythema multiforme, measles-like, scarlatinaform or hemorrhagic The latter was found in 2 2 per cent after diphtheria antitoxin and in 10 4 per cent after antistreptococcus serum injections

Of other rarer complications, Molchanova mentions affections of the joints (arthralgia, synovitis), elevation of temperature and albuminuria (in 0 3 to 0 4 per cent of the cases) and edema of the face, lids, upper lip, scrotum and prepuce The edema was not associated with albuminuria, casts or increased blood pressure, rather was there a fall of the latter A very disagreeable complication was gastro-intestinal disorders, vomiting, diarrhea and abdominal pain In four cases only there occurred cardiac collapse, with one death All these complications occurred usually from seven to twelve days after the injection of serum, or if the patient had had an injection some time before, the interval was from one to five days Concentrated serum gave fewer complications Calcium chlorid (2 per cent solution, a teaspoonful three or four times daily) did not prevent occurrence of complications The anti-anaphylactic method of Besredka was used in fifteen patients (2 c c of antitoxin was injected intramuscularly, followed two or three hours later by the curative dose hypodermically or intramuscularly), but it did not prevent complications The latter were rather mild, however, and hence Molchanova warmly recommends this method

102 **Intestinal Digestion in Man After Excision of Large Portion of Lower Intestine**—Gurevich has been studying the extent of assimilation of alimentary substances in a man who had had 159 cm of ileum removed He found that only the carbohydrates are normally assimilated, nitrogen and fats, very poorly Instead of the 12 1 per cent which is the normal rate for unassimilated nitrogen, there was 48 15 per cent The tests were carried out seven months after the operation, during which time the carbohydrate metabolism had become normal, that of albumin and fats was still deficient Yet the patient was gaining in weight and was cheerful, though he still had persisting diarrhea

103 **Cholera and Amebic Dysentery**—Yakimoff and Demidoff recommend to examine suspicious cholera cases, during epidemics in tropical regions, not only for cholera vibrios, but also for ameba It is necessary to stain the latter (Giemsa), it is easy to find them then There may be a combined infection with amebic dysentery and cholera

104 **Saline Infusion in Treatment of Sciatica**—Gubin obtained excellent results in the treatment of sciatica with rectal injections of salt solution (1 4 teaspoonful sodium chlorid to two glassfuls of hot water) with the drop method He used this method in seven patients and all recovered The general reaction was profuse sweating and increased diuresis A detailed report of one case with the description of the method, and illustrations, is given

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

October 9, II, No 15, pp 1727 1814

105 Extermination of Body Lice (Eenige opmerkingen over de bestrijding der kleederluizen) N H Swellengrebel
106 Improved Technic for Physiologic Electric Tests with Two Interrupted Currents (Een reactietaster voor twee elkaar vervangende stroomen) A A Grünbaum
107 Paratyphoid Effusion in the Knee in an Infant (Een zeldzaam geval van hydrops genu paratyphosus bij een zuigeling) F P J Doeleman

Hospitalstidende, Copenhagen

November 3 LVIII, No 44 pp 1127 1150

108 Functional Disturbances in Gait in the Young (Infantile funktionelle Gangforstyrrelser) P Lorenzen

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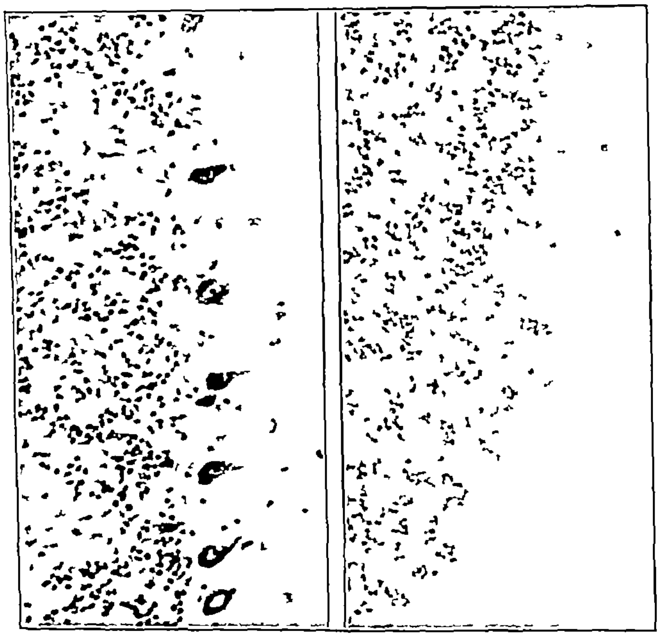
THE KINETIC DRIVE

ITS PHENOMENA AND ITS CONTROL *

GEORGE W CRILE MD
CLEVELAND

INTRODUCTION

The species of animal now dominating the earth more completely than any other is at this moment in a state of abnormal activity — the back-wash of the European war is seen in the quickened pulse everywhere even in this land Not only in war, but in peace also, the complicated machinery of civilization created by man often drives him to his own destruction Nowhere is this industrial and commercial driving more intense than in this city It has occurred to me, therefore, that it might be interesting to attempt an analysis of the mechanism by which this speeding is accomplished, and relate it to the speeding which is due to other stimuli such as infections, autointoxication, physical injury, etc Since the process of speeding is identical with that of the transformation of potential into kinetic energy, the state of increased energy transformation might fittingly be called the *kinetic drive* To facilitate discussion I shall assume an unwarranted attitude of dogmatism which may be evaluated at leisure



A.—Section of normal cerebellum of rabbit

B — Section of cerebellum of rabbit showing effect of extreme emotion (fright)

Fig 1 —Photomicrographs showing effect of fright on the brain cells of a rabbit Note the almost complete disappearance of Purkinje cells in *B*

THE KINETIC MECHANISM

Man is a mechanism, an automaton, whose primary work is the transformation of energy by means of a system of organs especially adapted to this end In these organs during sleep is stored the energy which during consciousness, in response to environmental contacts with distance, contact or chemical ceptors, is transformed into muscular action, into heat or into the representations of muscular action, such as emotion or mental processes"

The impulse or driving force, which causes the transformation of energy within the organism, is supplied by certain parts of the brain, and in the brain is found also the mechanism which makes the final manifestations of the transformed energy specific to the environmental contact which initiated the driving

The initiators of the kinetic drive may be roughly classed as *contact ceptor stimuli* — physical injury, heat, cold, etc , *distance ceptor stimuli* — written and spoken language, sight, smell, etc , and *chemical ceptor stimuli*—infection, autointoxication, pregnancy, excessive food, poisons, etc Whether or not any one of these stimuli acts singly or in combination with others, the end-effects are identical The effects of any one, therefore, may be studied as typifying all the rest

The organs, which from moment to moment vary and control, accelerate or retard the driving force of the brain are the suprarenals, the pacemaker of the kinetic system is the thyroid, and the final act of adaptive energy transformation is performed by the muscles

The primary process within the brain, by means of which its driving force is created and sustained, is oxidation Oxygen is supplied by the lungs If the blood be acid, oxygen cannot be carried by the hemoglobin Energy transformation depends, therefore, on the maintenance of the alkalinity of the blood Since the transformation of energy in the body is always accompanied by the formation of acid by-products, the continuance of the process of energy transformation demands a mechanism or mechanisms by means of which the acid by-products can be neutralized and eliminated These needs are met by the liver, the kidneys and the lungs The acid by-products of energy transformation are to a large extent broken down in the liver into simple compounds which are harmless to the kidneys by which these soluble end-products are eliminated, while the gaseous end-products are eliminated by the lungs

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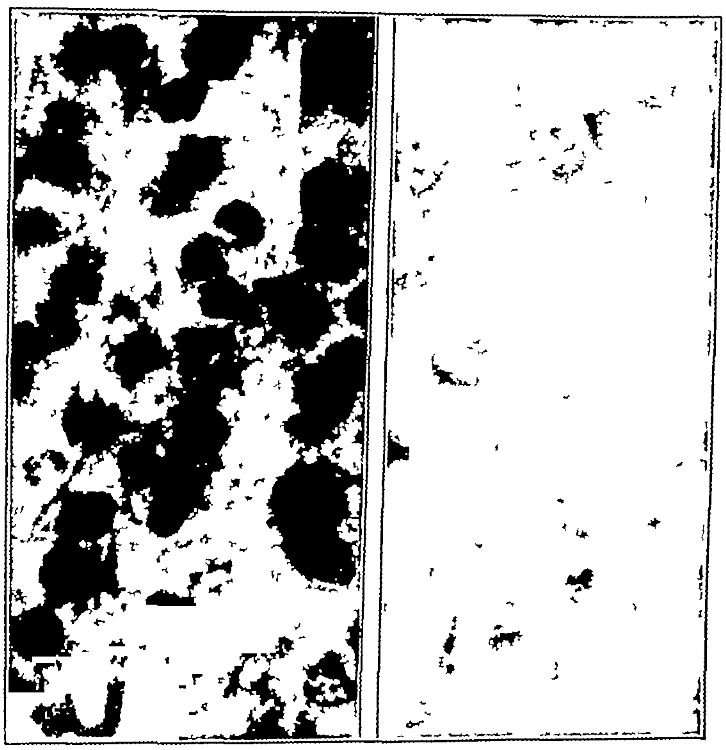
* Wesley M. Carpenter Lecture read before the New York Academy of Medicine, Oct. 7, 1915

If the system of organs, which we postulate is primarily adapted for the transformation of energy, acts as a *unit* and is restored only during sleep, then every excessive excitant of muscular action or of heat production between periods of sleep — such as prolonged consciousness (insomnia), muscular action, emotion, mental exertion, infection, foreign proteins, even pregnancy, etc, should cause identical changes in the histologic structure and the function of each organ concerned in the transformation of energy or in the neutralization and elimination of the resultant acid by-products, and in addition, intense and short, as well as long continued activation by any one of these agents should cause also identical acute and chronic diseases In other words, insomnia, intense *emotion* (*Figs* 1, 2 and 3), extreme exertion, infection, foreign proteins, pregnancy, etc, should cause histologic changes in the brain, the suprarenals and the liver, an increased output of adrenin, hyperplasia of the thyroid and a change in its iodin content, and changes in the glycogen content of the muscles and of the liver

If the foregoing be true, then it would follow that each of these activators would cause an increased production of acid by-products Therefore, exertion, infection, emotion, mental activity (increased consciousness) and foreign proteins or pregnancy should produce certain identical clinical phenomena First of all, we know that each of these activators causes increased respiration, increase in the frequency and force of the heart beat, thirst, excitability, perspiration, increased acidity of the urine, and identical manifestations of fatigue and exhaustion If the suprarenals determine the driving force of the brain from moment to moment, and if each activation of the *kinetic system* causes an increased output of adrenin, then it would follow that adrenin alone would produce the basic phenomena caused by an excitant of energy transformation — such as exertion, injury, infection, *emotion, pregnancy,* etc, and would produce identical histologic lesions, and it does In addition, adrenin given over a long period of time causes myocarditis, glucosuria, albuminuria, fatigue and in addition many symptoms of cardiovascular disease and of cardiorenal disease



A — Section of normal suprarenal of rabbit

B — Section of suprarenal of rabbit showing effect of extreme emotion (fright)

Fig 2 — Photomicrographs showing effect of fright on the suprarenals of a rabbit In *B* note the widespread loss of cytoplasm and the disappearance of nuclei

FUNCTION OF THE SUPRARENALS AND OF THE THYROID IN THE KINETIC DRIVE

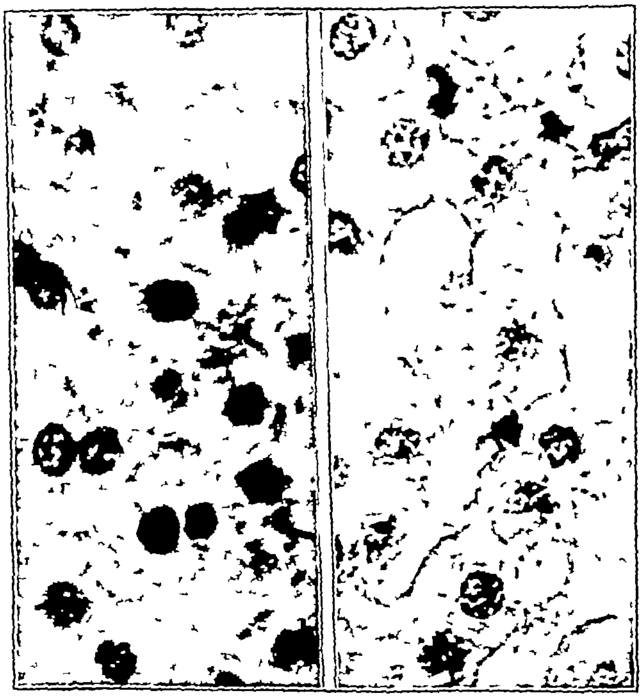
If adrenin causes phenomena identical with those produced by emotion, exertion, infection, etc, and if, vice versa, emotion, infection, exertion, etc, each causes an increased output of adrenin, then we may infer that it is through the increased mobilization of adrenin that increased energy transformation is accomplished by each of these activators Again, if this be the rôle of adrenin, we should find that in a state of suprarenal deficiency, the manifestation of energy transformation would be diminished And we find that this is true, for after double suprarenalectomy, there is an increasing and finally a total loss of muscular power and of heat production

If the nerve supply of the suprarenals is divided and then an adequate suprarenal stimulus applied, the output of adrenin is not increased If the nerves are intact and a large dose of morphin has been given, the application of an adequate suprarenal stimulus causes no increased output of adrenin (Figs 4 and 5)

We therefore conclude that the brain controls the transformation of energy by first driving the suprarenals, thus mobilizing adrenin, which is carried to the brain in the blood stream The result of the chemical combination of oxygen, adrenin and brain cell substance appears to be the production of energy impulses, these impulses being probably identical with electricity (Crehore and Williams) The electromotive force thus supposed to be fabricated in the brain is transmitted to the muscles, where the energy is finally transformed into heat, running, fighting, etc Since the suprarenals hold but a limited supply of adrenin, one would expect to find in the body some organ whose function is the secretion in abundant quantity of some substance by which the efficiency of adrenin is increased The belief that this function is performed by thyroid secretion is strengthened by the researches of Osterhaut, who found that iodin causes an increased permeability of living vegetable tissue to the passage of electricity The activity of thyroid secretion is directly proportional to the amount of iodin it contains, and we know that excessive doses of *iodin* alone cause all the phenomena of emotion and exertion, and, inversely, that emotion, infection, exertion, etc, cause changes in the iodin content of the thyroid If, in the midst of iodism, double suprarenalectomy be performed, the phenomena of iodism *should be diminished*

In this interrelation of the brain, the thyroid and the suprarenals, we have what perhaps is the master key to the automatic action of the body, that is, through the special senses environmental stimuli reach the brain and cause it to liberate energy, which in turn activates certain other organs and tissues, among which are the thyroid and suprarenals The increased output of thyreoiodin, by facilitating the transmission of electric currents through semipermeable membranes, increases the passage of nerve impulses and sets the pace for energy conversion In consequence the suprarenals are driven to increased activity, and the increased adrenin in turn excites the brain to still greater activity, the results of which are equivalent to increased work of the sympathetic nervous system These results are principally the following increased heart beat, increased respiration, raised blood pressure, increased sweating, thirst, the transfer of much of the blood from the splanchnic area to the surface, increased output of glycogen, increased power of the muscles to metabolize glycogen, increased acid excretion in the urine, certain histologic and chemical changes, and exhaustion

The phenomena of the kinetic drive in animals and in man are therefore essentially the phenomena of the kinetic drive of a locomotive The locomotive consumes carbon in the form of coal, man consumes carbon in the form of glycogen The locomotive produces heat and motion, man produces heat and motion The locomotive produces gaseous and solid acid by-products, so does man If the exchange of gases in the firebox of a locomotive is stopped, energy transformation ceases—the locomotive dies, if the exchange of gases in man is suspended, man ceases to transform energy—man dies



A.—Section of normal liver of rabbit.

B—Section of liver of rabbit showing effect of extreme emotion (fright)

Fig 3—Photomicrographs showing the effect of fright on the liver of a rabbit In *B* note the vacuolated spaces and other signs of disorganization

CONTROL OF THE KINETIC DRIVE

Turning from the phenomena of the kinetic drive to methods of control, we find first that morphin controls the rate of energy transformation in response to any stimulus Whatever the activation, whether infection, emotion, injury or exophthalmic goiter, morphin controls the outward phenomena, such as the pulse rate, respiratory exchange, sweating, thirst, restlessness, acid excretion, fever, muscular action and pain

The value of opium in infections and in pain is one of the foundation stones of medicine And here I must pause for a moment to pay tribute to a talented New York physician—Alonzo Clark—who on empiric grounds made a daring innovation in the opium treatment of peritonitis

Even today we must concede that next to surgical treatment the administration of opium is the most efficient treatment for peritonitis Guided by researches made in my laboratory, in collaboration with my associates, I have combined the administration of opium with surgical treatment in only those cases of peritonitis in which the kinetic drive threatened to kill the victim In such cases a quick *anociated* operation under nitrous oxid, Fowler's position, huge hot packs, saline infusions, sodium bicarbonate and glucose, plus the Alonzo Clark opium treatment for from twenty-four to forty-eight hours have given startlingly good results Opium blocks the kinetic drive, draining relieves tension, water and alkalies control acidosis, and the patient gets well Death from acute peritonitis from any cause has all but disappeared from the Lakeside Clinic The amount of opium must be determined not by quantity but by its effect on the drive, the respirations should be reduced to from 12 to 15 per minute In severe cases there must be no therapeutic faintheartedness

The final test of any theory in medicine is in the crucible of the clinic Our laboratory findings support not only the kinetic theory, but also the postulate that the kinetic drive may be controlled by the use of morphin, nitrous oxid and alkalies In the laboratory we have found that morphin prevents the mobilization of adrenin (Figs 4 and 5), that morphin and nitrous oxid block energy transformation, and prevent the histologic changes wrought by physical injury, infection and emotion (Figs 6, 7 and 8), and that alkalies counteract the effect of a kinetic drive by supplying the rapidly increasing deficiency of neutralizing bases These laboratory findings have been tested in Lakeside Hospital in a long series of operations on the stomach and the intestines, on the biliary tract, the pelvic organs and the appendix, in clean cases and in cases complicated by the severest acute infections, with a resultant remarkable reduction in both morbidity and mortality

The excessive energy transformation caused by physical injuries such as blows, crushes, penetrations, surgical operations, etc, like that caused by infection, may be blocked by morphin and nitrous oxid and the effect minimized by alkalies and water, and as in the infections, the dosage should be proportional to the intensity of the activation In surgical operations the brain may be insulated—and in consequence its driving power prevented by local anesthesia in the surgical field or by blocking the spinal cord or the nerve trunks communicating with the field While it is safe to block the kinetic drive by morphin in cases of acute injury or of acute infection, it is unsafe to use opium to block the effects of intense emotion, because of the danger of habit formation The tendency to habit formation, however, is the strongest possible evidence of the power of morphin to control the kinetic drive The emotional drive with its consequences, identical with the consequences of infection, exertion or physical injury, is best met through training and education leading to a philosophy of life that insulates the individual against destructive psychic stimuli Thus may the individual be anociated in the large clinic of life just as, through local anesthesia, the patient is anociated against the drive of the surgeon's knife

Never before has there been such an opportunity for studying the behavior of the human mechanism under the strongest physical and psychic stress as in warring Europe today There observations of the injured, of soldiers in the field, of prisoners and of refugees gave me an unparalleled opportunity for studying the human kinetic drive on a vast scale The illustrations show the gross effect of the combination of extreme emotion and exertion as they are manifested in the facies and bearing of Belgium refugees and of wounded soldiers, while the photomicrographs show the effect on the brain, the suprarenals and the liver of some of the kinetic stimuli to which these men had been subjected (Figs 9, 10, 11 and 12)

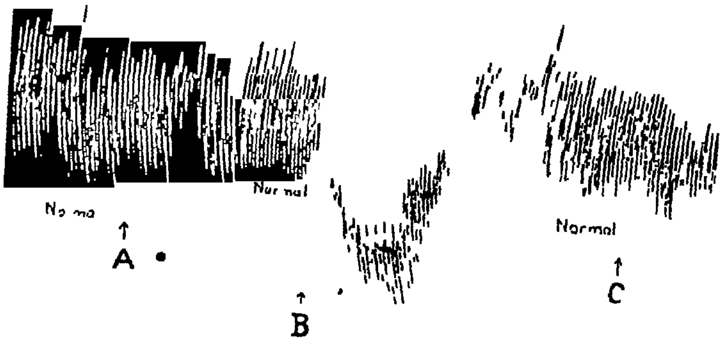


Fig 4—Tracing which, with Figure 5, illustrates the protective effect of morphin in anaphylactic shock (Cannon test) In this tracing it is shown that the adrenin which appears in the blood as a result of anaphylaxis inhibits the contractions of the intestinal muscle *A*, 5 c.c blood added from dog before anaphylactic dose was given, *B* 5 c c blood from dog in anaphylactic shock, *C*, 5 c c blood added from anaphylactic dog, after standing twenty five minutes

THE CHRONIC KINETIC DRIVE

Turning now from the individual acutely driven by injury, by infection, by emotion, let us consider the individually *chronically* driven by the stimuli of want, ambition, anger, jealousy or grief, by infection, by pain and by autointoxication In the acute kinetic drive the individual is endangered by death from exhaustion or from acid intoxication, whereas in the chronic drive, the danger is that one or another of the overdriven organs or tissues may be permanently injured In an acute drive, simple and direct control is possible, in a chronic drive we may encounter the added difficulties of pathologic changes in one or more organs or tissues I shall, therefore, discuss separately methods of control in those cases of chronic drive in which no organic change exists and in those in which organic changes do exist

The common chronic drives are mental and physical overwork, chronic infections, excessive diet and pregnancy, the emotions of fear, hate, jealousy, shame and despair, and foreign proteins, as in intestinal stasis These conditions present every-day problems and demand but little discussion Since the lesions of these various driving causes are the same, however, since infection, emotion and overwork produce identical end-effects, since usually two or more of these operate simultaneously, and since the emotional states are most amenable to control, it becomes obvious why these conditions have often been controlled by means which have apparently no direct therapeutic value, such as faith in the physician, travel, diversion, prayer, healing springs, philosophy and Christian Science Again and again, in the domain of regular medicine as in the domain of irregular medicine, the exclusion of worry has relieved the drive sufficiently to allow the body processes to overcome the primary disease But the reverse is true also — innumerable men, under the strain of a chronic drive, are pushed beyond the narrow limits of safety by the added drive of grief, worry or shame Is it not possible that when it is understood that the various kinetic stimuli have interchangeable physical values, the game of health will be more skilfully played? Incidentally, the chronic drive presumes a mild chronic acidosis — at least This, as Lawrence Henderson suggests, might be in part counteracted by alkalies and water

Passing now to that group of individuals whose organs have become affected by excessive energy transformation, we meet our greatest difficulties The proper prosecution of this theme would mean an extensive work on *medicine* I shall therefore give but a few illustrations

EXOPHTHALMIC GOITER

First of all, perhaps the most typical of the kinetic diseases is exophthalmic goiter In exophthalmic goiter the kinetic system is driven by a continuous activation, because in this disease there has been established a pathologic interaction between the brain and the thyroid, whereby the threshold to all stimuli is kept continuously low Exophthalmic goiter exhibits a progressive alteration in every function of the body, leading eventually to exhaustion, with visible lesions, depending on the duration and severity of the disease, in every organ and tissue of the body, not alone in the brain, suprarenals and liver, but also in the heart and blood vessels, the muscles, the thyroid, the thymus, the pancreas, the spleen, the lymphatics, the skin, the skeletal muscles, the teeth, the hair and the bony skeleton Extreme and protracted exhaustion from excessive exertion, excessive emotion or chronic infection causes similar lesions

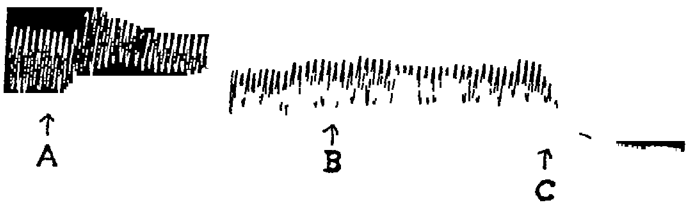


Fig 5—Tracing which, with Figure 4, illustrates the protective effect of morphin in anaphylactic shock (Cannon test) This tracing shows that the injection into a morphinized animal of beef serum, which in the normal animal would have caused a strong anaphylactic reaction and a greatly increased output of adrenin, causes no increased output of adrenin, as is evidenced by the contractions of intestinal muscle as in normal blood Since morphin acts directly on the brain, this experiment evidences not only the protective effect of morphin but also the dependence of the suprarenal on the brain for its activity *A* 5 c c control blood added from dog *B* 5 c c blood added from dog five minutes after intravenous injection of 15 c c beef serum *C* a few drops of pure adrenin added

In other words, the principal phenomena of exophthalmic goiter are identical with the leading phenomena of any other kinetic drive of a corresponding degree of intensity, and may be duplicated by fear, anger, sexual excitation, physical exertion, overwork or acute infection. Conversely, many of these activations cause hyperplasia of the thyroid. Thus fear, anger or sexual emotion may cause temporary enlargement of the thyroid, there is hyperplasia of the thyroid in pregnancy, in chronic infections, and perhaps in intestinal autointoxication as well.

There is a fundamental resemblance between certain aspects of exophthalmic goiter, of iodism, of suprarenalism, of emotion and of infection. The resemblance so often noted between exophthalmic goiter and excessive emotion is not surprising in view of the frequency with which the disease is traced to an emotional origin, for among the stimuli initiating exophthalmic goiter, protracted emotion is, perhaps, the most dominant. In a majority of cases, careful inquiry will disclose some deeply entrenched disturbing emotional factor — a great grief, the existence of harassing home conditions, poverty or shame, business reverses, overwhelming responsibilities, an unhappy love affair, or some acutely distressing thought, which drives the kinetic system incessantly. In my own experience, in cases of exophthalmic goiter, for the causation of which no factor in the external environment can be held responsible, the internal environment has usually supplied the disturbing factor, infection or autointoxication, for example. I have never known a case of exophthalmic goiter to result from hard physical labor, unattended by "psychic" strain, or from energy voluntarily and naturally expended.

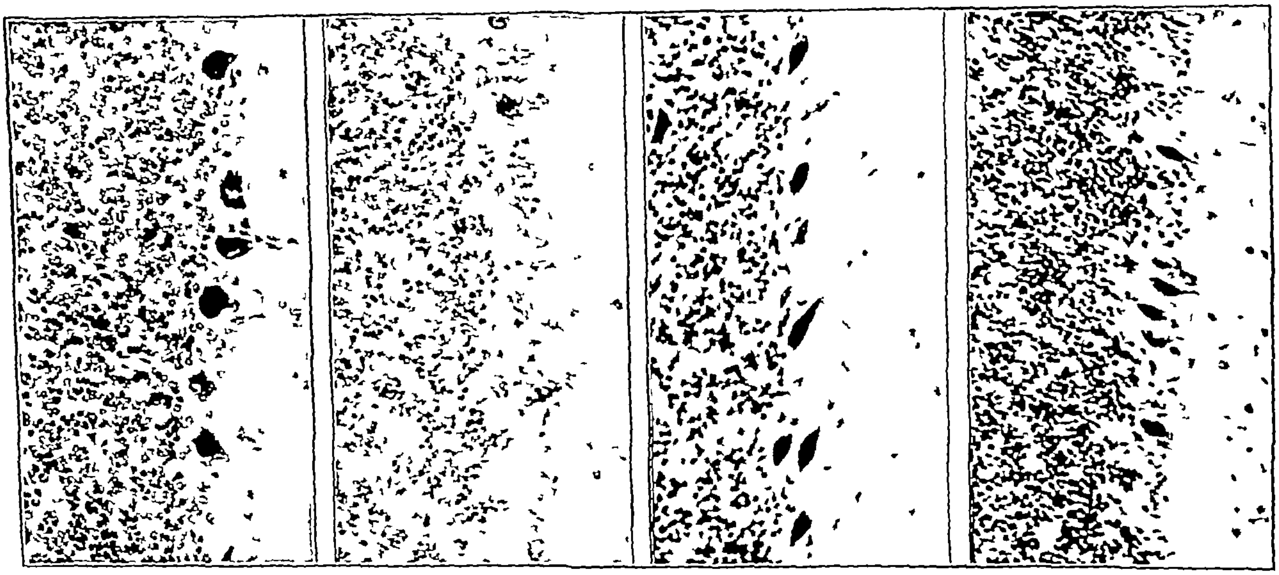
Whatever the exciting cause of exophthalmic goiter, however, whether unusual business worry, disappointment in love, a tragedy, a strong fear, the illness of a loved one, intestinal autointoxication, an acute or chronic infection, or the administration of excessive doses of iodin or thyroid extract, the symptoms are identical and closely resemble the phenomena of one of the great primitive emotions.

INFECTION

There is a period of excessive kinetic drive in fever which exactly corresponds to the kinetic drive in emotion, and which signifies the preparation of the organism for self-defense by chemical activity, just as emotion signifies the preparation of the organism for self-defense by motor activity. The evolution of a receptor mechanism for foreign proteins may be explained on the ground that only by oxidation is the body able to split up and eliminate foreign proteins. The one method of inducing oxidation is through the kinetic system. The living protein molecules of the body are more resistant than the foreign protein molecules, and hence the body is purified by fire — by oxidation.

It would seem, therefore, that fever is the result of a driving of the kinetic mechanism by an infection (foreign protein) stimulus for purposes of self-defense by the splitting up of the molecules of the foreign protein through the transformation of latent energy into heat, and it would seem that emotion is the result of a driving of the same mechanism by a psychic stimulus for purposes of self-defense or procreation, in part at least, by muscular action, while exophthalmic goiter is a purposeless driving of the mechanism by some obscure disarrangement connected with a pathologic change in the function of the thyroid.

Reasoning from the secure facts of the clinic and the less secure data of the laboratory, I conclude that the primary lesion of exophthalmic goiter is the establishment of an abnormal facility for the passage of action currents in the central nervous system. As previously stated Osterhaut has given us definite data as to the effect of iodin on the electric permeability of skelp. There is evidence on a vast scale that such a state of increased electric permeability exists in exophthalmic goiter. It has been stated that electric currents are increased in the skin of patients with exophthalmic goiter. Exophthalmic patients are extremely sensitive to all stimuli: infection, autointoxication, injury, emotion and electricity.


A.—Section of normal cerebellum of a dog.

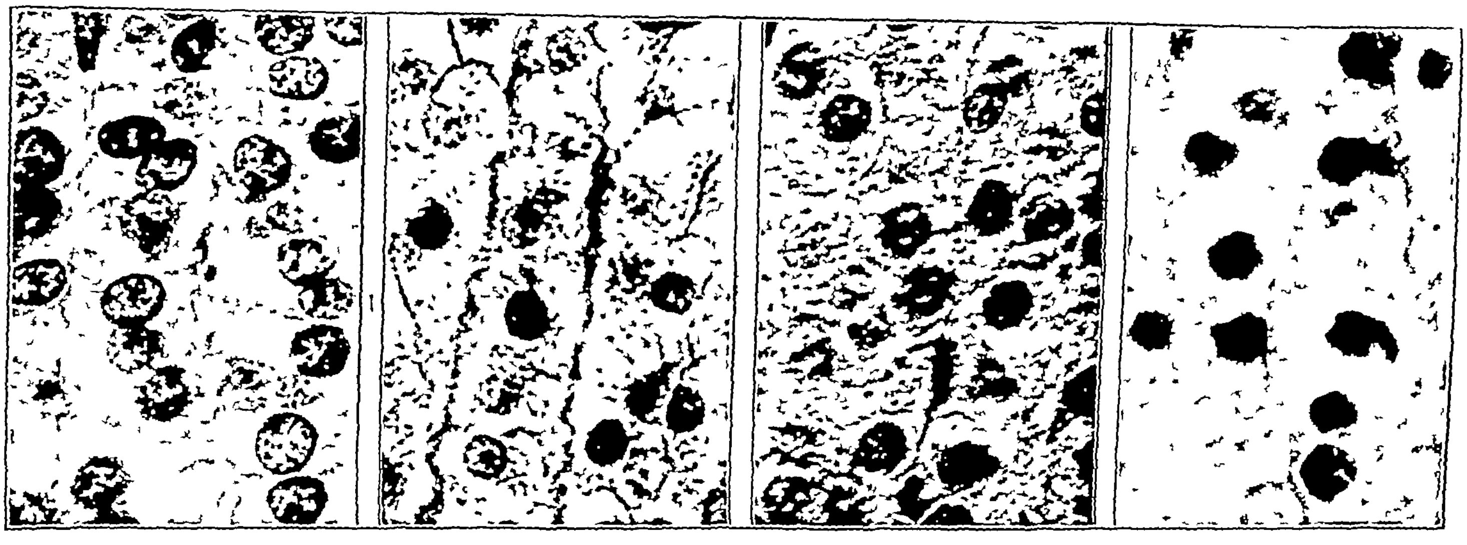
B.—Section of cerebellum of a dog after injections of diphtheria toxin.

C.—Section of cerebellum of a dog after injections of diphtheria toxin plus morphin.

D.—Section of cerebellum of a dog after injections of diphtheria toxin and the continuous administration of nitrous oxid for four hours.

Fig. 6.—Protective effect of morphin and of nitrous oxid on the brain cells of dogs which had received injections of diphtheria toxin. Compare the Purkinje cells in *C* and *D* with the disintegrated hypochromatic cells in *B*.

That these several activations involve the same mechanism is borne out by many points of similarity between exophthalmic goiter and infections The likeness of the phenomena of the kinetic drive in exophthalmic goiter to those of chronic infections, particularly of tuberculosis, is so marked that it is not at all uncommon to find diagnosticians of wide experience recommending treatment for tuberculosis to a patient with exophthalmic goiter, and an operation for exophthalmic goiter to a patient with tuberculosis In two different cases of the same degree of intensity, it may be almost impossible to distinguish the case of exophthalmic goiter from the case of tuberculosis Sometimes the two conditions may be present in the same patient The following symptoms are common to both exophthalmic goiter and tuberculosis tachycardia, increased respiration, flushed face, tremors, persistent slight fever, nervousness, rapid loss of weight, digestive disturbances, increased acid secretion of the urine, hyperplasia of the thyroid and of the lymph glands and enlargement of the heart Even at necropsy the lesions — barring the tuberculosis focus itself — may be so nearly identical in the two cases as to baffle differentiation In tuberculosis as in exophthalmic goiter, the entire kinetic system is overdriven


A. — Section of normal suprarenal of dog

B — Section of suprarenal of dog after injection of diphtheria toxin

C — Section of suprarenal of a dog after injection of diphtheria toxin plus morphin

D — Section of suprarenal of a dog after injection of diphtheria toxin and the continuous administration of nitrous oxid for four hours

Fig 7 — Protective effect of morphin and of nitrous oxid on the suprarenals of dogs which had received injection of diphtheria toxin Note the general disappearance of cytoplasm and nuclei in *B*, compared with the normal appearance of *C* and the conserved nuclei in *D*

Thus the kinetic theory of exophthalmic goiter, of infections and of emotion supplies a possible biologic interpretation of the induction of these states, of their mutual resemblance, and of the method of their control All are modified by rest, all are temporarily controllable by morphin, all cause increased H-ion concentration in the blood, and, therefore, tax heavily the organs of acid neutralization, namely, the respiratory center, the kidneys, the suprarenals and the liver *The increased respiratory rate in each of these conditions is accounted for by the specific stimulative effect of the increased H-ion concentration of the blood on the respiratory center* The demand for neutralization of the increased acidity incident to emotion, work, infection or exophthalmic goiter is responded to by increased activity of the liver If the acidity is increased so rapidly that neutralization cannot keep pace with it, then nephritis may develop as an effect of the acid by-products on the kidneys Hence in intense emotion, exertion, infections and exophthalmic goiter, albumin and casts are frequently and sugar is sometimes found in the urine, and in extreme cases acute acidosis may develop The acidosis of emotion, of infection and of exophthalmic goiter is expressed in each case by thirst The cycles of vomiting in exophthalmic goiter are probably caused by acidosis, which is the most common cause of death in this disease Thus, in the immediate symptoms and in the end-effects, even to the resulting acidosis and pathologic lesions, we find a close resemblance in the essential phenomena of exertion, emotion, infection and exophthalmic goiter — phenomena which are harmonized and interpreted by the kinetic theory

CARDIOVASCULAR DISEASE

The analogy between diseases of the thyroid and diseases which among other organs involve the suprarenals is borne out by many clinical points For example, exophthalmic goiter and cardiovascular disease have many characteristics in common Each of these conditions bears an intimate relation to foreign protein activation and to "nervous strain" The etiology of exophthalmic goiter is much the same as that of cardiovascular disease In each of these diseases a recall of the unhappy circumstances or conditions which led to or precipitated the acute stage is sufficient to cause an exacerbation of all the symptoms The most efficient means by which each of these diseases may be modified are rest, diversion, and change of scene and occupation In each the secretion of the gland most involved seems to bear a specific relation to the production of the disease For instance, as has been stated, the cardinal symptoms of exophthalmic goiter may be produced in a normal person by the administration of thyroid extract, and in the patient with exophthalmic goiter the administration of thyroid extract, even in small quantities, causes an immediate exacerbation of the symptoms In like manner, adrenin aggravates the symptoms of cardiovascular disease, and when given to a normal animal in excessive dosage is said to produce lesions similar to arteriosclerosis Like results cannot be obtained by the administration of the secretion of any other gland in the body In exophthalmic goiter the thyroid is always enlarged, in cardiovascular disease, the suprarenals are usually enlarged

The literature of the etiology of arteriosclerosis is a long record of superlative stimulations and deep depressions, a story of great risks taken and great losses borne, of heavy burdens carried and long strains endured, of vast responsibilities assumed, of excessive dissipation, of chronic infection, of autointoxication of overindulgence in food and intoxicants, of great joys and great griefs, of hopes, anxieties and despair It is essentially a story of the modern world of power and progress and success, of liberty and luxury and of their antitheses, of mental tolerance combined with bitter, crushing oppression The contemplative scholar of the middle ages, the bucolic Swede, the wandering Scotch bard, the Italian peasant probably did not know arteriosclerosis, except as the logical accompaniment of a ripe old age The director of vast financial enterprises, the man who holds the fates of thousands in his hand, he who carries tremendous physical burdens, the Chinese coolie, the Japanese rickshaw man, the athlete of the western world, the emotional American, the excitable Jew, the bank president, the *bon vivant* — these are the men whose days are shortened by early hardening of the arteries, who preempt to themselves the cardiovascular, and likewise the cardiorenal diseases The superlatively emotional Jew, besides being a frequent victim of cardiovascular disease, is likewise a frequent sufferer from the allied condition, endarteritis obliterans Among animals, the high spirited wild animals in captivity, the mettled race horse and the dray horse, fretted and driven often beyond its capacity, are frequent sufferers from cardiovascular disease The somnolent, unfettered cow is exempt

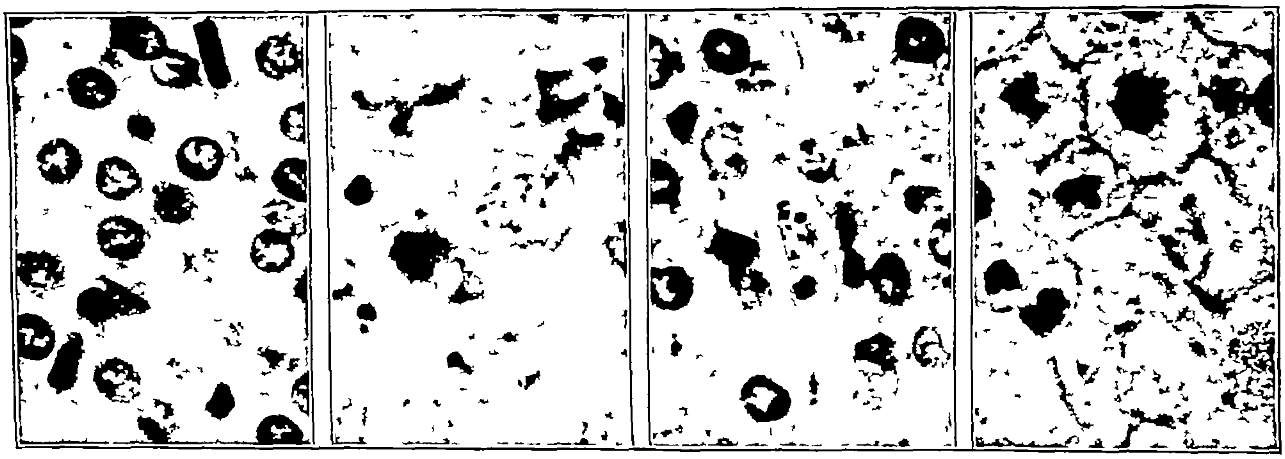
BRIGHT'S DISEASE

In the great strain laid on the organs of reduction and elimination by the excessive acid by-products resulting from the kinetic drive of emotional activation, physical exertion and infection, we may find common causes of Bright's disease We have shown by experiment that in frightened rabbits, enraged cats and traumatized dogs the kinetic system can be driven at such a rate of speed that the organism is unequal to the task of neutralizing the too rapidly formed acid by-products so that they can be eliminated without injury to the kidneys In addition, we have shown that when the activity of the brain has been depressed by morphin, the rate of transformation of energy is decreased and the production of acid by-products correspondingly lessened If, as seems probable, the suprarenals and the liver are the most important agents by which the reduction of the acid by-products is accomplished, then a habitual failure of these organs to perform this function might lead to an accumulation of harmful compounds which would directly facilitate tissue degeneration in the kidneys, thus causing nephritis In Bright's disease, hyperplasia of the suprarenals is frequently seen

DIABETES

The more powerful excitants of the kinetic system cause an increased output of adrenin, and adrenin causes the mobilization of the glycogen stored in the liver so that, among other results of kinetic activation glucosuria is produced While glucosuria is not diabetes, it represents a step toward this disease, and one would expect, therefore, that the kinetic drive which in one individual causes the breakdown of the thyroid, in another of the brain, and in another of the suprarenals, in others might produce diabetes That this is so is shown by the fact that diabetes is improved by the conditions which obviate psychic strain The identification of the common causes of diabetes with the common causes of exophthalmic goiter, arteriosclerosis, neurasthenia and Bright's disease may explain why, in the words of a certain phrase maker, "when stocks go down in New York, diabetes goes up", why diabetes is more commonly found in large cities, among individuals and races who are constantly under a strain of business perplexities, and are constantly within sight and hearing of thousands of irritating and harassing episodes, and why it is rare in localities where leisurely and quiet ways of life prevail In the fact that here, again, the emotional trade-driven Jew is a frequent sufferer, we have important matters for consideration

Diabetes not only numbers among its common causes the common causes of other kinetic [illegible] ut also



A.—Section of normal liver of a dog

B—Section of liver of a dog after injections of diphtheria toxin

C—Section of liver of a dog after injections of diphtheria toxin plus morphin

D—Section of liver of a dog after injection of diphtheria toxin and the continuous administration of nitrous oxid for four days

Fig 8.—Protective effect of morphin and of nitrous oxid on the livers of dogs which had received injections of diphtheria toxin. Note the vacuolation of *B* and compare with the conservation of nuclei and cytoplasm in *C* and *D*

as in the case of exophthalmic goiter, arteriosclerosis, neurasthenia, etc , it is improved by rest, diversion and dietetic control

SURGICAL METHODS OF CONTROLLING THE KINETIC DRIVE

It would seem to follow that a chronic disease which is made worse by increasing the kinetic drive would be improved by lessening the drive, and in like manner, would be improved temporarily by blocking the drive by means of morphin Morphin is but a temporary expedient, however, and the results of its use may be worse than the disease caused by the drive If the effects of morphin are produced by its control of the driving force of the brain, thus preventing the brain from driving the suprarenals and the thyroid, then a like result to that produced by morphin could be secured by breaking the connection between the brain and the thyroid and the suprarenals, by the excision of a portion of the thyroid and of the suprarenals, and, if still further blocking of brain impulses be required, by dividing the cervical sympathetics as well

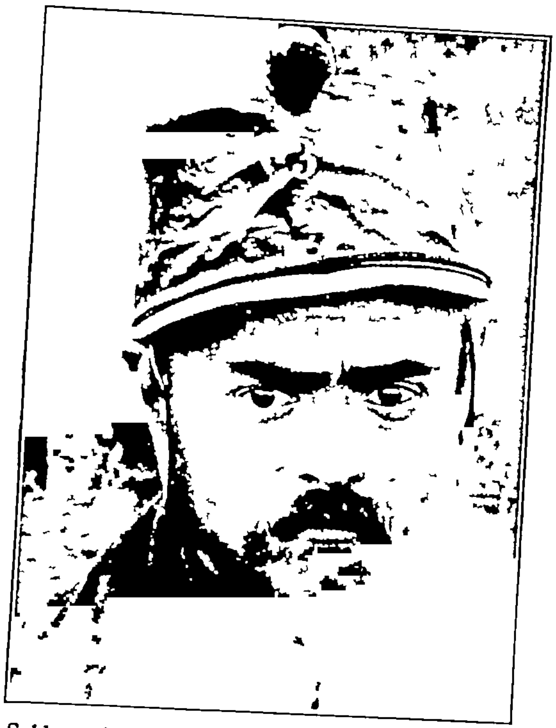


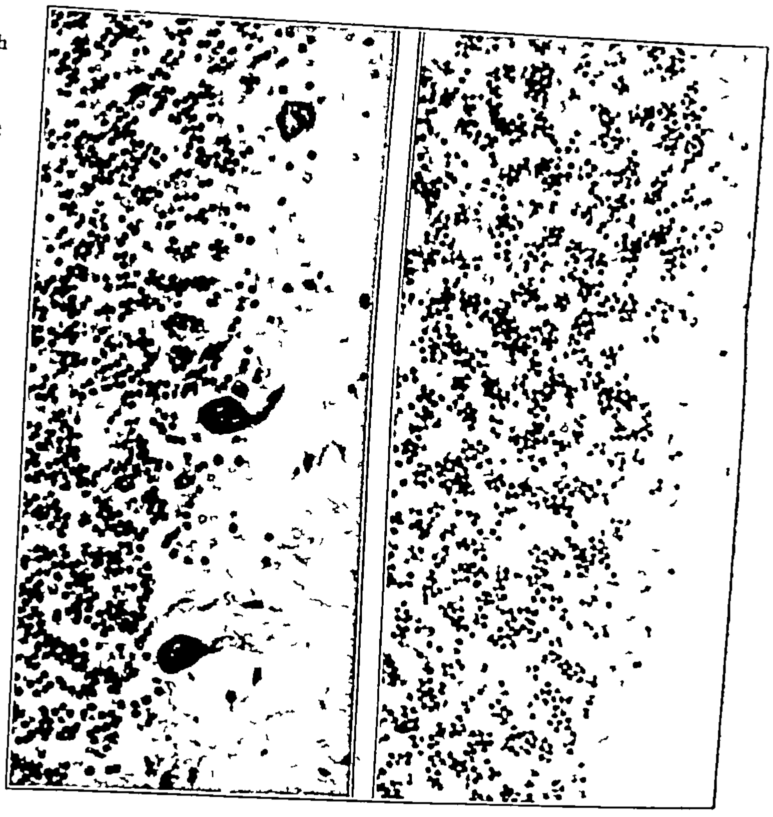
Fig 9 —Soldier showing the characteristic facies common to both psychic and physical stress.

One would not expect these procedures to produce any subjective change in the patient No function would be lost He could work, be subject to emotion, and respond to infection as before, with the following exceptions His power of physical exertion would be *diminished*, as would his response to emotional stimuli or to infection His acid excretion would diminish, and his sugar tolerance would increase In short, those diseases that are *temporarily* improved by morphin should be permanently improved by this process of *dekineticization*

On this conception I have ventured on new surgical ground and have performed fifteen operations on patients with chronic diseases resulting from an excessive kinetic drive I first operated on eleven hopeless epileptics, then on a patient with cardiovascular disease, on three patients with Raynaud's disease, and finally on an advanced diabetic All made good operative recoveries The operation, which was performed in different stages, comprised the excision of one suprarenal, the excision of approximately three fourths of the thyroid, and the division of the cervical sympathetics

It is now two and a half years since the first of these operations was performed It was not expected that epilepsy would be cured, but that the force of the attacks would be diminished, and perhaps the intervals lengthened, for since the epileptic attack represents a powerful temporary kinetic drive, it seemed possible that the severity of that drive might be modified No patient has been cured, but all made good operative recoveries, and the severity of the attacks and the length of the intervals have been favorably influenced The fact that some of these cases showed an increased sugar tolerance confirmed us in our belief that the same procedure might be of avail in cases of diabetes The principal net result of these operations on epileptic patients was the assurance that in man as in animals these procedures do not interfere with normal functions This fact being established, other fields are now being approached cautiously

In Raynaud's disease there is a striking diversion of blood to the extremities, in ebbs and flows These rhythms are in a measure determined by emotion, by cold, etc Since it is known that Raynaud's disease is most common in that emotional race, the Hebrew, that the most significant effect of emotion is the increased mobilization of adrenin, and that one of the results of the increased fabrication of adrenin is the transference of blood from the inner organs to the surface of the body, it would seem that this otherwise hopeless disease might with propriety be attacked on a kinetic basis Three patients thus treated by me, the first two and a half years ago, give fair promise



A B

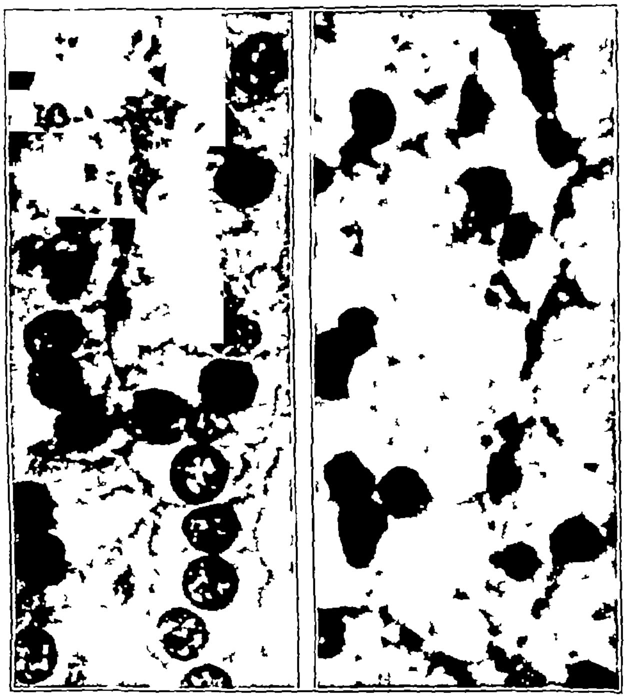
A —Section of normal human cerebellum

B —Section of cerebellum of a soldier who had suffered from hunger thirst and loss of sleep had made the extraordinary forced march of 180 miles from Mons to the Marne in the midst of the great battle was wounded by the explosion of a shell lay for hours awaiting help and died from exhaustion soon after reaching the ambulance Compare the faded out, exhausted Purkinje cells with the Purkinje cells in A

Fig 10—Effect of extreme activation on the brain cells of a soldier

of recovery But in a disease of such chronicity, the different phases of which are manifested in such long rhythms, judgment must be reserved until a long time has elapsed and until many cases have been observed

Since the kinetic drive may be concerned in greater or less degree in the causation or continuance of Raynaud's disease, exophthalmic goiter, Bright's disease cardiovascular disease and diabetes, on *a priori* grounds it is evident that either none or all of these will be benefited by a surgical reduction of the driving power of the kinetic system


A B

A.—Section of normal suprarenal.

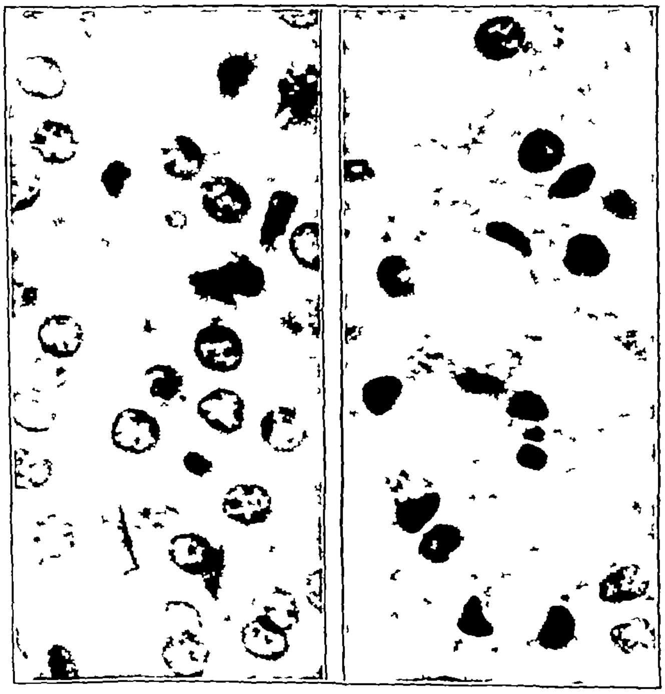
B—Section of suprarenal of soldier described in Figure 10 The general disintegration of the cells, loss of cytoplasm and misshapen and eccentric nuclei illustrate the effect of emotion exhaustion lack of sleep pain infection and trauma.

Fig 11—Effect of extreme activation on the suprarenals of a soldier

I have already compared the effects of the kinetic drive on the normal human mechanism to the normal action of the locomotive In like manner the problem presented by these kinetic diseases may be compared to the effect on a damaged automobile of reckless driving by an irresponsible chauffeur In such a case the machine may be prematurely wrecked, whereas with careful driving at a moderate speed even the damaged automobile may give long service Vast numbers of men and women today possess such damaged mechanisms, which the stress of present-day life is driving to inevitable destruction Included in this doomed throng are many of the most useful men and women—the very kinetic temperament to which they owe their achievements proving to be also their greatest menace It is for such cases as these, in which medicine fails to provide the necessary kinetic control, that this surgical procedure is proposed In considering this operation, it must be borne in mind that we are dealing with poor surgical risks, and as far as the suprarenalectomy is concerned, a technically difficult operation Every possible protection, therefore, should be provided It is most important that the operation be performed under nitrous oxid-oxygen, rather than under the lipoid solvent, ether The principle of anociation should be applied throughout the operation, as the excessive acid-products resulting from cutting or handling sensitive tissues may diminish too much the narrow margin of safety and dispatch the patient Especially is this true of diabetes

The value of surgical modification of the kinetic system in that intense kinetic drive, exophthalmic goiter, is established We know that by dividing the nerve supply of the thyroid, ligating the thyroid arteries, or excising a portion of the thyroid gland, this disease is modified or cured In these cases the blood pressure falls, the myocarditis improves, albumin and casts disappear, the sugar tolerance is raised, the intense neurasthenia is improved In other words the renal, cardiovascular, glycogenetic and psychic phenomena simultaneously improve I have no doubt that in exophthalmic goiter the excision of a suprarenal, or the division of the nerve supply to the suprarenals, would also facilitate the cure

I have referred to the lessening of glucosuria by operation in certain cases of exophthalmic goiter It is well known that in cases of either suprarenal or thyroid deficiency, sugar tolerance is raised, while, on the contrary, the injection of excessive amounts of adrenin or of excessive thyroid extract mobilizes sugar Therefore, in intractable diabetes may it not be possible that the diminution of the total mass of the suprarenals and of the thyroid may sufficiently increase the sugar tolerance to mitigate or actually to cure the disease?


A B

A.—Section of normal liver

B—Section of liver of soldier described in Figure 10 The general disintegration of the cells the loss of cytoplasm and the vacuolated spaces within the cells illustrate the effect of emotion exhaustion lack of sleep pain infection and surgical trauma

Fig 12—Effects of extreme activation on the liver of a soldier

The patient with diabetes whom I have so treated through the courtesy of Dr C. F Hoover and Dr C. D Christie, Lakeside, is a *man* aged 42, who was admitted to L side Hospital in January, 1915 For a period mon June 25 when the first operation was the amount of sugar in the urine had ranged daily from 9.5 to 202.5 gm., with an average of 96.4 gm. At no time during these six months until the morning of the first operation was he known to be sugar free. In June at intervals of three and seventeen days respectively, the following operations were performed: (1) section of the right cervical sympathetic, (2) left suprarenalectomy, and (3) excision of the left cervical sympathetic with partial thyroidectomy. The patient made a good operative recovery. On the day of the first operation the sugar content of the urine was 83.6 gm.; on the following day it was 8.4 gm., since which time, with the exception of a few instances between the last two operations, he has been continuously sugar free. This patient now—four months after his first operation—is taking approximately 250 gm. of carbohydrates daily, and since his operation he has gained 9 pounds. It should be stated that Dr. Christie has continued a careful medical supervision of the case, employing the Allen treatment. Therefore, to obtain the surgical net result, we must subtract from this striking improvement the undetermined factor of the Allen treatment.

SUMMARY

The kinetic theory harmonizes many facts in the great clinic of life as well as in the restricted clinic of medicine; it emphasizes the value of a mechanistic view of life in the study of both normal and pathologic processes, and it suggests a philosophy of life by means of which self-preservation may be secured through kinetic control.

According to the kinetic theory, the resemblance of many normal and pathologic processes—exertion, emotion, infection, autointoxication, etc.—suggests that the mechanism by which they are produced is identical with the mechanism by which the transformation of energy and the elimination of acid by-products are accomplished; that is, that these conditions are caused by variations in the kinetic drive.

Since an excessive kinetic drive may be the result of the simultaneous action of various factors in the external and the internal environment, then the control of one or more of these factors will lessen the drive and mitigate its effect. Thus the substitution of hope for fear may relieve the organism of one driving factor and by so much relieve the strain on the kinetic system. In other cases the depression of the activity of the brain by morphin or by nitrous oxid anesthesia controls an acute kinetic drive.

For still other cases in which disease has resulted from the physical injury wrought in certain organs by an excessive drive, *it is proposed as a problem, not as an accomplished fact,* that the activating organs of the kinetic system, the suprarenals and the thyroid, be reduced in size and that their communication with the driving organ—the brain—be in part severed. By an analogous method the result of an intense kinetic drive—exophthalmic goiter—is modified or cured; the accompanying cardiovascular, cardiorenal, myocardial and neurasthenic symptoms are coincidentally relieved, and sugar tolerance is raised.

If exophthalmic goiter which is due directly to the overspeeding of the kinetic system is thus relieved by partial excision of one of the driving organs, the thyroid, this mechanistic treatment effecting simultaneously the cure of the condition brought about by the driving power of exophthalmic goiter itself, then the logical conclusion is that these allied diseases, when brought into existence by other kinetic drives, may be mitigated or cured by a dekineticizing operation. *A large amount of experimental data not yet published suggests this problem.*

THE TREATMENT OF PAROTID TUMORS BY RADIUM *

RICHARD WEIL, M.D.

NEW YORK

The second report of the Radium Institute of London describes a number of favorable results, characterized either as improvements or as cures, obtained in parotid tumors through the application of radium. The pathologic histology of these growths is not further specified in the text. The literature of the past few years contains occasional references to parotid tumors favorably influenced by means of radium; in no instance, however, so far as I am aware, had any of these tumors been submitted to a careful microscopic study. It is, however, unquestionably a matter of importance to determine whether or not any particular type of parotid tumors is especially suitable for radium treatment. Not all of the cases which have been so treated have been cured, and it would make for greater precision in treatment, if it were possible to determine that certain types of parotid tumors respond to the treatment whereas others do not. In the case which is here reported a small portion of the tumor was removed for diagnosis, and it is on that account that the case is reported in detail.

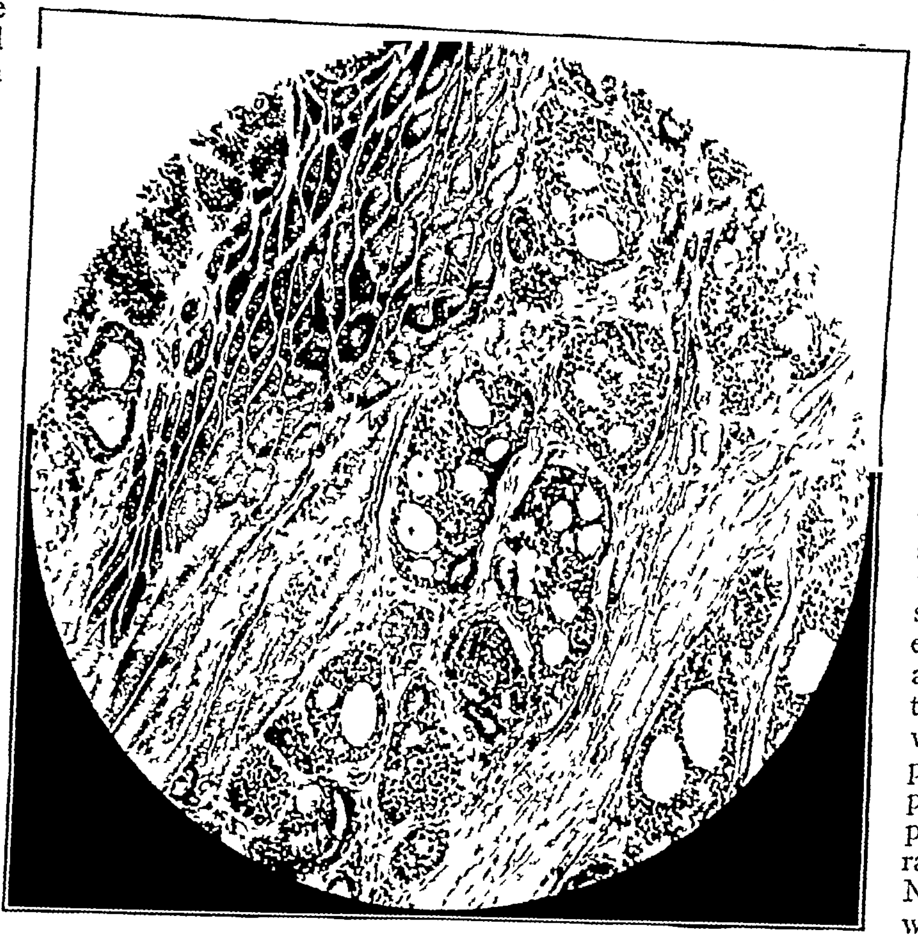


Fig. 1.—Photomicrograph of section of tumor.

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* From the General Memorial Hospital.

The patient, an unmarried woman aged 38, was admitted to the General Memorial Hospital, Dec. 20, 1913. She gave the following history: Seven years previously she first became aware of pain located behind the right ear. Following this she observed an induration and swelling which first occupied the region in front of and below the ear. The swelling gradually increased in size, eventually involving the entire lower half of the ear and the upper part of the neck behind the ear. Difficulty in opening the mouth and pain during mastication induced her to have a number of teeth removed. In 1912 she developed the symptoms of facial paralysis on the right side. Toward the end of 1912 the right eyeball became somewhat more prominent.

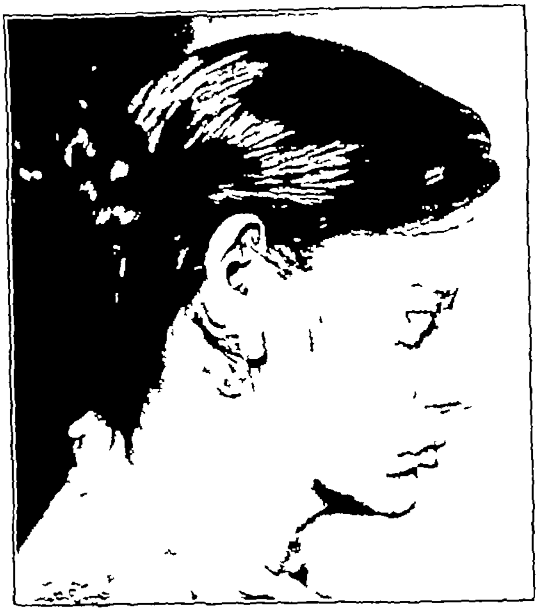

Fig. 2.—Appearance of patient, January, 1913.

The condition on admission was described as follows: The right ear appears very much deformed, the lower half being involved in an indurated mass which extends forward on to the face, and back of the ear over the mastoid process and the upper part of the neck. This mass measures from side to side 3½ inches, and from above downward 2½ inches. It is extremely firm and resistant to pressure, the surface slightly irregular and nodular. The margins are fairly well defined from the neighboring healthy tissues. The growth is firmly fixed to the deeper structures. The skin is movable over it except behind the ear, where it is firmly adherent. In the area where it is adherent the skin presents a reddish discoloration and has dilated superficial vessels. The lower half of the ear, which forms part of the mass described above, is distorted and densely infiltrated, and is firmly fixed to the remaining tumor mass.

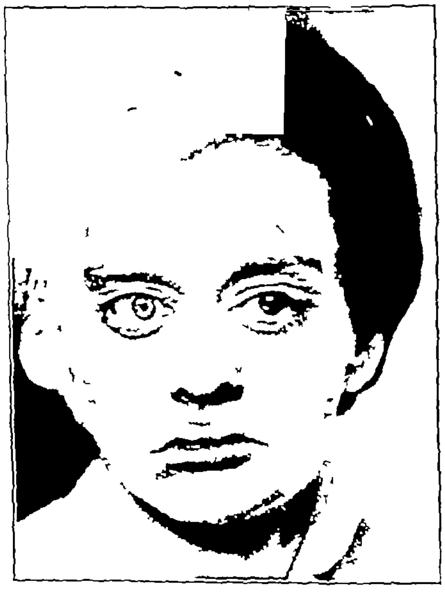

Fig. 3.—Appearance of patient, January, 1913.

There is a complete right-sided facial paralysis with right lagophthalmus.

Both eyeballs are more prominent than normal, but the right eyeball more so than the left. The pupils are equal, regular, and react normally. The right abducent nerve is paralyzed.

December 29, a small specimen of tissue was removed from that part of the tumor lying behind the ear. The microscopic section presents strands of epithelial-like cells in the midst of which lie hyaline masses. The appearance corresponds to that frequently described as cylindroma. On these sections Dr. Ewing rendered the diagnosis of "adenoid cystic epithelioma." A neighboring lymph node, which was removed with the tissue, had not been invaded by the tumor process. On the other hand, the sections show that the muscle bundles had been extensively infiltrated and were in large part destroyed. None of the types of tissue which ordinarily characterize the mixed tumors of the parotid could be discovered in the sections.

The classification of this tumor is of interest, inasmuch as it belongs to a type which has caused considerable discussion. Originally Billroth gave these tumors the name of cylindroma, for the reason that hyaline bodies of various shapes, but predominantly cylindric, could be expressed from them when fresh. As regards the histogenesis of cylindroma, there was considerable difference of opinion, some holding them to be sarcoma, some endothelioma, and still others carcinoma. It is now known that the hyaline character is one which may be shared by various types of tumor, and the name is therefore merely of descriptive, not of generic value. Discussion of this type of salivary gland tumor has in recent years centered chiefly around the question as to whether they are endothelial or epithelial in origin. Owing to the work of Hinsberg and many others, including latterly Marchand, the epithelial origin has now become well established. Krompecher accepted this view, but attempted to go a step further, and ranged these tumors with the basal-celled carcinomas, which have so charateristic a structure among skin tumors. It is true that in many respects they present a striking analogy with the basal-celled cancers. They are usually well encapsulated, nodular, slowly growing tumors, which may be surgically removed without likelihood of recurrence. Exceptionally, however, the epithelium shows an infiltrative tendency, and breaks through the capsule. Microscopically, also, the structure is similar in many respects to the basal-celled tumors. For these reasons it seems proper to consider these tumors as a separate group, differing in certain important features from adenocarcinoma as commonly understood. Although they resemble the basal-celled group in certain respects, it is not likely that they have the same cellular ancestry, for the reason that they have no connection with the epidermis. It seems correct to trace their origin to the salivary gland itself. Not improbably they arise, as Ribbert and others have held, from congenitally ectopic masses of glandular tissue, which assume an excessive, but not a malignant growth in later life. Thus it will be evident that the independent position of these tumors among the adenocarcinomas gives a rational ground to the expectation that they might react to therapeutic measures in a somewhat exceptional manner.

In January, 1914, a small incision was made into the tumor below and behind the ear in the most prominent part of the swelling Into this incision a trocar was driven to the depth of about 1 inch Into this cavity a tube containing radium was introduced In all, the patient received eighteen such applications The tube consisted of 10 mg of radium bromid shielded by 1 mm of lead It was left in position at each application for four hours The applications were made at first at intervals of three or four days, and subsequently at intervals of a week or more The applications caused no pain and very little local reaction Within two weeks after the beginning of the treatment the tumor began to undergo a marked change characterized by a diminution throughout its entire extent At the same time the induration gradually disappeared February 10, the patient was discharged At this time the tumor had almost entirely disappeared, and the parts had been restored to a condition approximately normal The lobe of the ear, however, still remained slightly swollen and indurated, a condition which has now completely disappeared The cheek, the neck and the mastoid region present no trace of their previous condition After her discharge from the hospital, the patient returned at intervals of about two to four weeks to receive Roentgen-ray or radium treatment At the present time there is no indication of any recurrence, although treatment has been suspended for many months The permanency of this recovery is, of course, not yet established

The facial palsy, which was unquestionably due to destruction of the facial nerve either by infiltration or by pressure, has not receded

A puzzling feature of this case is presented by the condition of the right eye Ophthalmologists to whom the patient has been referred have attributed the ocular condition to the presence of a retrobulbar mass pushing the eye forward and involving the sixth nerve Whether or not this mass can be brought into relation to the parotid tumor is a matter of speculation The ocular condition has not been affected by the treatment

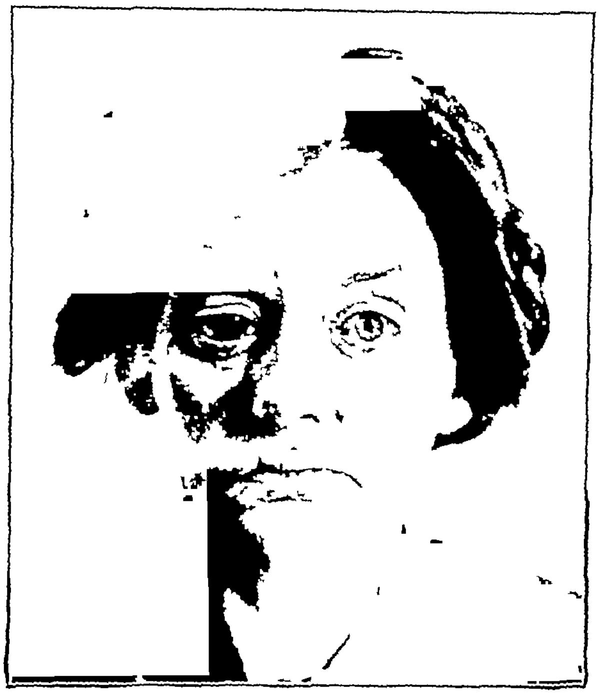

Fig 4 —Appearance of patient, July, 1915

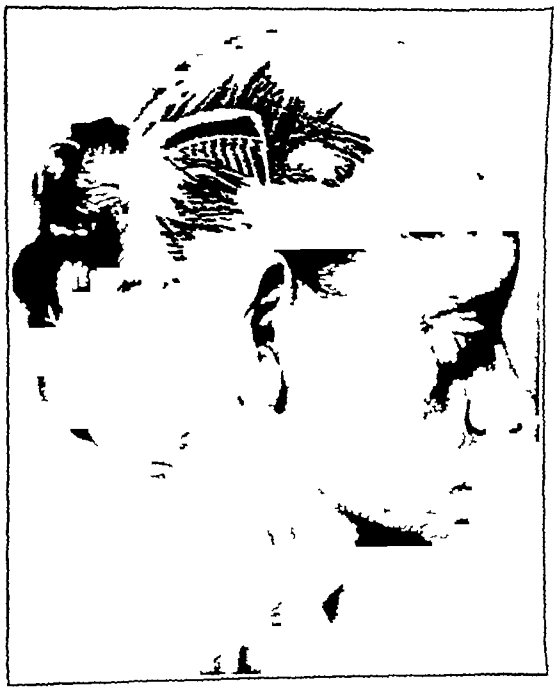

Fig 5 —Appearance of patient, July, 1915

SUMMARY

A parotid tumor of seven years' duration, presenting certain characteristic pathologic features, was treated for a period of six weeks by the insertion of radium into the tumor The tumor disappeared, and after an interval of almost two years presents no recurrence

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Medical School Inspection—The North Carolina State Board of Health is actively advocating the medical inspection of schoolchildren in counties which do not have a whole-time county health officer, that a system in inspection arrangements may be perfected whereby the local county board of health and school officials may arrange with the state board for an inspection The board furnishes competent experienced physicians for this work, which is to be made a part of the unit system of the work to be performed by the state board in counties whose incomes do not, in the opinion of local public sentiment, justify the installation of a whole-time health officer

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TRICHINOSIS

REPORT OF A CASE WITH THE TRICHINA LARVAE IN THE SPINAL FLUID

LEON BLOCH, M D
Attending Physician, Cook County Hospital
CHICAGO

Early in 1914, Van Cott and Lintz[1] reported the finding of actively motile larvae in the spinal fluid of a patient with trichinosis Since that time their findings have not been confirmed until the finding of the larvae in the case herewith submitted

History—A K, man, aged 19, a laborer, entered my service in the medical ward of the Cook County Hospital, Oct 29, 1915, stating that he had had pains in the muscles of the arms and legs for four weeks, and that he was unable to straighten them out At the time of the onset of his sickness he noticed a slight edema of the eyelids which lasted three days Severe drenching sweats and periods of chilliness and fever had been present for one week On the night before entrance to the hospital he had a slight nosebleed He did not complain of any gastro-intestinal distress of any kind, nor had he had any headache Before entering the County Hospital he had been for three weeks in another institution where the diagnosis of trichinosis had been made from the history and muscular pain, but a piece of muscle tissue had not been excised for examination

The patient had eaten half a pound of raw hamburger steak every Saturday night for three weeks He did not smoke, was a moderate drinker and denied venereal disease

Examination—The patient appeared to be severely prostrated and was unable to move around in bed without considerable pain There was marked rigidity of the neck and tenderness of the intercostal muscles, the abdomen was diffusely tender to touch, both on superficial and deep pressure, the spleen was not enlarged There was marked tenderness of the biceps of the arms and of the calf muscles, while the other muscles appeared to be less tender, he was unable to extend the arm on account of the severe pain in the biceps The Kernig sign was present, there were no Babinski and no exaggeration of the patellar reflexes October 30, an excised piece of muscle from the biceps showed as many as ten unencapsulated trichinae in a low power field, many of which were also seen in the expressed muscle juice A blood examination at this time revealed 8 per cent eosinophils, 77 per cent polymorphonuclears and 15 per cent small and large mononuclears 13,000 leukocytes 4,200,000 reds and 83 per cent hemoglobin Two subse-

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1 Van Cott, J M, and Lintz, William Trichinosis, The Jour A M A, Feb 28, 1914, p 680

quent examinations, November 23 and 24, showed 37 and 38 per cent eosinophils, respectively.

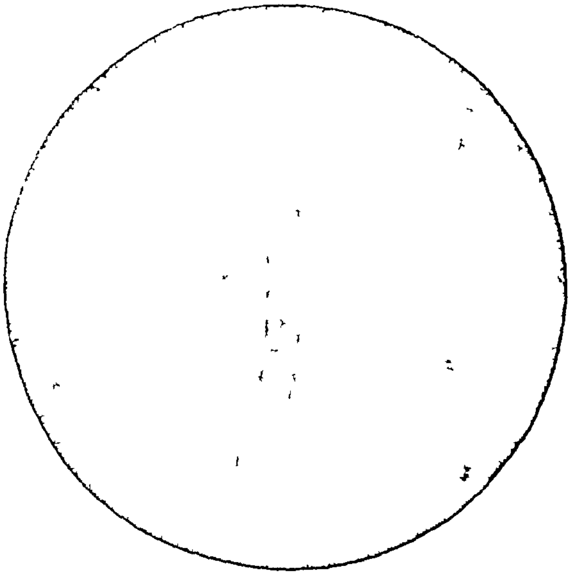
The patient's temperature on admittance was 101.2 F, and ranged from 99.6 to 101.4 during practically the whole time he was under observation, becoming normal about November 21. At that time he developed an acute tonsillitis with a temperature of 102 which lasted for three days and from which he recovered completely. A blood culture at that time was negative.

November 1, 20 c.c. of clear serous spinal fluid under high pressure were removed, positive to Nonne and Noguchi tests, and showing about a dozen actively motile trichina larvae in the centrifuged specimen. A puncture, November 8 yielded negative results aside from still positive Nonne and Noguchi tests; a cell count was not made at the time.

Treatment and Results.—Following the administration of calomel November 6, an enormous number of trichinae were found in the stool; these were found in small masses of mucus. The embryos were also found in the blood with the use of the Herrick and Janeway technic.

The patient now seems to have recovered completely, and is able to be up and about in the ward performing the duties of a ward man. There is practically no muscular tenderness.

The points of special interest in this case are the presence of the trichinae in the spinal fluid without symptoms referable to the brain or cord, the absence of gastro-intestinal symptoms, the small percentage of eosinophils at the height of the disease and their increase as the patient's condition improved.



Trichina larva from spinal fluid mounted on phenol gelatin.

Kafka[2] states that the cysticercus and trypanosomes have been found in the spinal fluid. On account of the absence of cerebrospinal symptoms in the majority of patients with trichinosis, the spinal fluid has not been examined for the parasite. The positive Nonne and Noguchi tests would indicate a meningeal irritation; this might be a clue as to the manner in which the parasites enter the spinal fluid.

In the consideration of the manner in which the parasites may enter the spinal fluid there are three possible sources of entrance: 1. Directly through the central capillaries of the choroidal villi. 2. Cushing[3] states that the perivascular lymphatics contribute to the cerebrospinal fluid, and it is possible that the organisms may gain entrance to the cerebrospinal fluid through this route. 3. Directly through the cerebral cortex into the subarachnoid space.

Sicard[4] cites a case of trichinosis which came to necropsy in the Boston City Hospital in which the trichinae were found in the cerebrum. It would seem probable, however, that the easiest mode of entrance would be through the choroid plexus.

The absence of gastro-intestinal symptoms has been noted on several occasions. McClure[5] in thirty cases reports diarrhea in nineteen, constipation in three, anorexia in fourteen. As the latter two symptoms have not provoked the distress that the diarrhea does, it can be seen that these symptoms may be easily overlooked. It has also been noted[6] that when rats are fed large quantities of trichina-infected meat, they die within one or two days without intestinal lesions.

The low eosinophil count during the height of the disease is not remarkable if we parallel this finding with the low leukocyte count in severe pneumonias, or the low resistance to infection when the body is overwhelmed by toxins. Gruber[7] found that very severe and unfavorable cases of trichinosis show a low eosinophil count. Van Cott and Lintz[1] cite an instance of 5 per cent eosinophils in a fatal case just before death. Herrick,[8] quoting Opie, makes a statement to the same effect. Only after the acute symptoms had subsided and recovery seemed certain did this patient's eosinophil count rise from 8 to 38 per cent. I have repeatedly seen patients with mild trichina infections at the Cook County Hospital with from 50 to 60 per cent eosinophils.

While several examinations of the stool failed to show the parasite, the administration of large doses of calomel caused them to appear in large, tangled masses, coincident with the appearance of the parasites in the stools the patient's condition began to improve.

CONCLUSIONS

1. Trichina larvae can be found in the cerebrospinal fluid.
2. Meningeal irritation undoubtedly exists, as is shown by the positive Nonne and Noguchi tests.
3. Severe infections show low eosinophil count during the acute stage, which increases with convalescence.
4. Vigorous catharsis with a view of clearing the intestinal tract from all parasites which have not yet penetrated into the mucosa appears to have limited the infection.

25 East Washington Street.

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[2] Kafka, V.: Ztschr. f. d. ges. Neurol. u. Psychol., 1912, vi, Nos. 4 and 5.

[3] Cushing: Studies in Cerebrospinal Fluid, Jour. Med. Research, September, 1914.

[4] Sicard: Med. Rec., New York, Aug. 15, 1914.

[5] McClure, C. W.: Jour. Iowa State Med. Assn., March, 1915.

[6] Staubli: Trichinosis, 1909.

[7] Gruber: Neue Studien uber die Pathologie der Trichinose, Munchen. med. Wchnschr., 1914, p. 645.

[8] Herrick: Jour. Med. Research, February, 1913.

Comparative Vivisection.—The castration of an animal as performed on the farm by far exceeds in cruelty and callousness of performance anything which I have ever witnessed in a laboratory. A few hundred animals are used in all our laboratories for all purposes. The census report shows that in California, in 1909, there were born 163,728 bull calves. It is fair to assume that 150,000 were castrated. There were born 41,927 colts. Of these approximately one half were probably males, and making deductions for those kept as stallions there were here at the lowest estimate 19,000 geldings. There were 283,741 pigs born, which means probably 135,000 males to have their testes ripped out. A total each year in California of 304,000 operations. Comparing these in number and violence with the work in biological laboratories and medical schools, the latter becomes wholly insignificant. But the gelding of the boar does not have emotional appeal, and we hear little about it. Dehorning of cattle is painful but saves vastly more pain than they would inflict on one another.—S. S. Maxwell, *Science*.

SUMMARY OF CHEMOTHERAPEUTIC STUDIES IN EXPERIMENTAL TRYPANOSOMIASIS *

JAY FRANK SCHAMBERG, M D,
Professor of Dermatology in the Philadelphia Polyclinic and College for Graduates in Medicine
JOHN A KOLMER, M D
Professor of Pathology
AND
GEORGE W RAIZISS, Ph D
Associate Professor of Physiologic Chemistry
PHILADELPHIA

METHOD OF STUDY

1 *Therapeutic Experiments* —In our investigations, the following four parasites were employed the *Spirochaeta recurrentis* (the parasite of relapsing fever), the *Trypanosoma brucei* (the parasite of Nagana disease of horses), the *Trypanosoma lewisi* (a saphrophytic parasite in rats), and *Trypanosoma equiperdum* (the parasite of la dourine or horse syphilis)

Inasmuch as the influence of the drug administered on the duration of life of the infected animals was one of the important criteria of its efficiency, we found the *Trypanosoma lewisi* unsatisfactory because it does not as a rule kill the animal The spirochete of relapsing fever led to confusing results because of the frequent remissions and the disappearance of the parasite from the peripheral blood The *Trypanosoma brucei* killed rats within a few days, a period too short to study the effects of the weaker agents The *Trypanosoma equiperdum* was found admirably adapted to the purposes of our studies, and was the parasite generally employed by us It kills the rats in from five to seven days after injection

Fig 1 —Patient with hereditary syphilis

The series of rats were infected by intraperitoneal injection with *Trypanosoma equiperdum* according to the methods of Kolmer[1] By these methods, contamination is avoided and approximately known numbers of trypanosomes injected We have found this a matter of considerable importance, inasmuch as irregular methods of infecting the test animals, as by injecting enormous numbers of trypanosomes in one series and only a few in another, may readily influence the results, whereas with a uniform method, succeeding series of rats may be infected with approximately the same and known numbers of trypanosomes with uniform results capable of comparison

Rats were infected intraperitoneally twenty-four hours before the intravenous injection of the solution of the chemical under study With the numbers of trypanosomes injected by us (generally from 100,000 to 150,000 per rat) the parasites were practically never found in the peripheral blood until after the first twenty-four hours We have experimented with other methods consisting of the infection of the test animal followed immediately by the injection of the drug, and also by allowing forty-eight hours or more to elapse between infection and the administration of the drug, when the parasites had multiplied sufficiently to be found in the peripheral blood, but the foregoing method has yielded us the best results

Each animal was carefully weighed, and the quantity of the chemical injected was proportioned to the body weight It would be a serious error to inject a series of rats with increasing doses of the drug regardless of the weights of the animals, in all of our work, the chemicals were administered according to each hundred grams of body weight, and each dose was prepared separately in a sterile vial for each individual animal

The chemicals under study were administered dissolved in sterile distilled water so diluted that the dose was contained in exactly 1 cubic centimeter Intravenous injections were made into the jugular vein or in some instances into the caudal vein, the former method being preferred because it permits of absolute accuracy under conditions in which the loss of even a drop or two of the solution might seriously influence the results

Chemicals which were not soluble in water were employed in oil or incorporated in a fatty menstruum

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* An extended publication of the results abstracted here will be published later

[1] Kolmer, J A A Method of Transmitting Blood Parasites, Jour Infect Dis, 1915, xvi 311, A Method of Transmitting Known Numbers of Trypanosomes, with a Note on the Numeric Relationship of Trypanosomes to Infection, ibid, 1915, xvii, 79

TABLE 1—INFLUENCE OF INTRAVENOUS INJECTIONS OF MERCURIC CHLORID AND ENESOL ON EXPERIMENTAL TRYPANOSOMIASIS RATS INFECTED WITH INTRAPERITONEAL INJECTIONS OF 1-6 000 TRYPANOSOMA EQUIPERDUM †

Substance	Rat No	Weight Gm	Dose per 100 Gm	Daily Examination of Blood						
				1	2	3	4	5	6	7
Mercuric chlorid	1	70	0003	∓	+	+++	++++	death		
Mercuric chlorid	2	63	0003	—	—	++	++	++++	death	
Mercuric chlorid	3	48	0002	—	few	few	++	++++	death	
Mercuric chlorid	4	74	0002	—	few	+	++++	++++	++++	death
Mercuric chlorid	5	70	0001	—	few	+	++++	++++	death	
Enesol	6	51	001	—	+	++++	++++	++++	death	
Enesol	7	51	0008	—	+	++	++++	++++	++++	death
Enesol	8	60	0006	—	+	++++	++++	death		
Enesol	9	61	0004	—	+	++++	++++	death		
Control	10	45	0	—	+	++++	++++	death		
Control	11	97	0	—	+	++++	++++	death		
Control	12	77	0	—	+	+++	++++	death		
Control	13	62	0	—	+	++++	++++	++++	death	

† In the tables, — equals number of trypanosomes in the peripheral blood few equals 1 to 2 in a field or in every other field + equals about 5 to 10 in a field ++ equals about 10 to 20 in a field +++ equals large numbers that may be roughly counted (not accurately) ++++ equals very large numbers cannot be counted

and injected intramuscularly into the thighs Soluble drugs were also administered by mouth to rabbits and rats by means of a proper sized catheter used as a stomach tube

In every experiment at least four controls were included All animals were examined daily by securing a drop of blood from the tail on a microscopic slide, spreading with a glass cover and examining at once with 1/6 objective and a No 4 eyepiece (Leitz) The results were recorded according to the number of trypanosomes observed in a large number of fields, according to the scheme given under Table 1

There were necropsies after the deaths of the majority of the animals, and histologic examinations were made of the organs As pointed out in a former paper, even with the most careful attention to the weight of the animal, the dosage and the technic of infection and of administration of the drug, animals would not infrequently succumb for inexplicable reasons, likewise quantitative relations with minute and closely graduated doses of a chemical do not always yield uniform and graduated results It appears to be impossible to conduct biologic experiments of this character with justified expectation of precise mathematical results

2 *Toxicity Experiments*—The detailed results of an extensive series of experiments on the toxicity of the water soluble and insoluble salts of mercury will shortly appear in another communication[2]

In testing the toxicity of mercurial and arsenic salts, white rats and rabbits were employed Two methods of determining toxicity were employed by us, namely, the determination of (1) the immediate lethal dose (dosis lethalis) and (2) the largest dose that is tolerated over a prolonged but arbitrarily fixed period of time (dosis tolerata)

As in the therapeutic experiments, each drug was administered according to the weight of the animal, the dose for each animal being separately prepared in sterile vials with sterile solvents and diluents

In determining the immediate lethal dose of a chemical, rats and rabbits were injected intravenously and the immediate effects noted and recorded, for the tolerated dose, rats and rabbits were injected intravenously with water-soluble chemicals and intramuscularly with water soluble and insoluble substances

Rats were largely employed in the study of the toxicity of the mercurials, and both rats and rabbits for salvarsan and allied products

In determining the lethal dose of salvarsan and allied compounds in rabbits, the substances were prepared with sterile water as the solvent and diluent, and in such manner that 15 c c contained the entire dose per kilogram of body weight determined on The animal was then injected intravenously with 10 c c of the solution followed in a few minutes by the remaining 5 c c if no untoward effects were noted Each animal was then kept under close observation until death occurred, or for at least a month if it survived After necropsy, the internal organs were submitted to gross and histologic examinations In this manner we have made a great number of necropsies after the administration of various doses of salvarsan and allied products and at varying intervals after administration This material is being studied at present, and a full report will be made at a future time

The intravenous injection of a lethal dose of salvarsan into a rabbit is followed almost immediately by violent convulsions followed by a period of general paralysis Smaller doses may produce a brief convulsion followed by paralysis especially involving the hind legs, the animal recovering in from a few minutes to an hour

The injection of 15 c c of the fluid rapidly and without interruption is more likely to produce immediate effects than the injection of 10 c c followed in a few minutes by the balance of 5 c c The injection of 10 c c of sterile water or normal salt solution alone is without effect on a rabbit of average weight

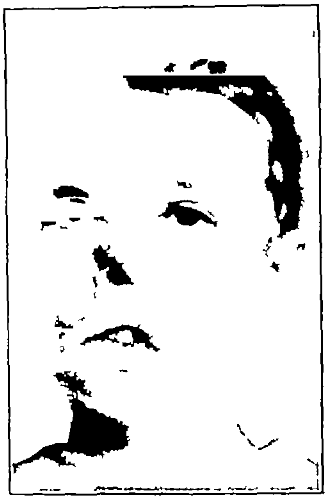

Fig 2—Patient in Figure 1 about two weeks later Patient received one dose of 0.2 gm of the salvarsan prepared in our laboratories no other treatment

INTERPRETATION OF FINDINGS, AND THEIR BEARING ON THE TREATMENT OF SYPHILIS

Of the various drugs employed by us, the only ones that were found capable of destroying the *Trypanosoma equiperdum* (and indeed, trypanosomes generally) in the blood of infected animals were those

TABLE 2.—INFLUENCE OF INTRAVENOUS INJECTIONS OF COPPER SULPHATE AND SODIUM CACODYLATE ON EXPERIMENTAL TRYPANOSOMIASIS RATS INFECTED WITH INTRAPERITONEAL INJECTIONS OF 100 000 TRYPANOSOMA EQUIPERDUM

Substance	Rat No	Weight Gm	Dose per 100 Gm	Daily Examination of Blood							
				1	2	3	4	5	6	7	8
Copper sulphate	1	61	0008	—	few	+	+++	+++	++++	death	
Copper sulphate	2	57	.0006	—	+	+	++++	++++	death		
Copper sulphate	3	58	0004	—	+	+	++++	++++	death		
Copper sulphate	4	57	0002	—	few	few	few	++	++++	death	
Copper sulphate	5	54	0001	—	few	+	++++	++++	death		
Sodium cacodylate	6	72	01	—	few	++	++++	++++	death		
Sodium cacodylate	7	75	008	—	few	++	++++	death			
Sodium cacodylate	8	102	.006	—	few	++	++++	++++	++++	++++	death
Sodium cacodylate	9	82	.005	—	few	++	++++	death			
Sodium cacodylate	10	120	004	—	few	++	++++	death			
Sodium cacodylate	11	71	003	—	few	++	++++	death			
Sodium cacodylate	12	106	002	—	few	++	++++	death			
Sodium cacodylate	13	92	001	—	few	++	++++	death			
Control	14	90	0	—	few	++	++++	death			
Control	15	101	0	—	few	++	++++	death			
Control	16	75	0	—	few	++	++++	death			
Control	17	83	0	—	few	++	++++	++++	death		

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[2] Schamberg, Jay F Kolmer J A., and Raiziss G W Jour Cutan Dis. to be published

belonging to the arsenobenzol group, namely, salvarsan and neosalvarsan

FAILURE OF MERCURY, COPPER, ENESOL, SODIUM CACODYLATE AND IODIN

Mercury, copper, enesol[3] and sodium cacodylate in the maximum nonlethal dosage exerted no appreciable effect on the number of trypanosomes in the blood, or on the duration of life of the experimental animal Scores of experiments were carried out with all of the well-known mercurial salts and with a number of new organic mercurial compounds made in our laboratory, but with the same results as were obtained with mercuric chlorid Iodin was likewise employed intravenously, but failed to exert any trypanocidal influence We recognize that the failure of these substances to influence trypanosomiasis does not indicate that they are equally inefficacious in syphilis Experimental trypanosomiasis is an overpowering infection in which the blood soon swarms with parasites which rapidly destroy life, unless a powerful trypanocidal drug is employed The trypanosomes react in large measure to the influence of drugs, as do the spirochetes, the spirochete of relapsing fever, which is resistant to the drugs mentioned above, is readily destroyed by salvarsan

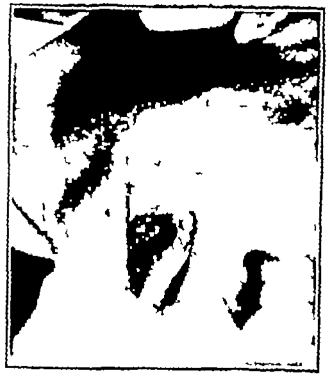

Fig 3 —Patient with chancre of the chin with accompanying adenopathy

We know, however, from clinical experience that mercury and the iodids exert a curative influence on the lesions of syphilis Whether they do so by the formation of some intermediate product which exerts a noxious influence on the spirochetes, or whether they stimulate the formation of antibodies, or whether they act in some other manner, is yet unknown

We are publishing elsewhere our studies of the toxicity of mercury, the effective dose of salvarsan is distinctly less poisonous than the effective dose of mercury This is due to the relatively low organotropism of salvarsan as compared with mercury By reason of this fact, salvarsan can be given in massive doses Experimental animals will stand 60 milligrams or more of salvarsan intravenously, per kilogram of body weight, whereas 3 mg per kilogram of mercury intravenously proves fatal

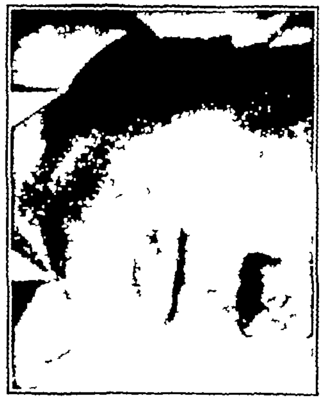

Fig 4 —Patient in Figure 3 two weeks later Patient received two injections of 0 3 and 0 6 gm, respectively, of the salvarsan prepared in our own laboratories

Our findings in animals convince us that weekly intramuscular injections of insoluble mercurials must of necessity lead to cumulative effect, with frequently severe damage to the kidneys We believe the safest effective way to employ mercury is by inunction

TABLE 3—INFLUENCE OF INTRAVENOUS INJECTIONS OF SALVARSAN (GERMAN AND DERMATOLOGICAL RESEARCH LABORATORY PRODUCTS) AND NEOSALVARSAN (GERMAN) ON EXPERIMENTAL TRYPANOSOMIASIS RATS INFECTED WITH INTRAPERITONEAL INJECTIONS OF 125 000 TRYPANOSOMA EQUIPERDUM

Substance	Rat No	Wt Gm	Dose per 100 Gm	Daily Examination of Blood																							
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Salvarsan (German)	1	88	0057	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvarsan (German)	2	92	0043	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvarsan (German)	3	72	0042	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvarsan (German)	4	76	0028	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvarsan (German)	5	91	0011	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+	++	+++	+++
Salvarsan (German)	6	80	0008	—	—	—	—	—	—	—	—	+	++	+++	++++	+++	death										
Salvarsan (Dermatological Research Lab)	7	88	0058	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvarsan (Dermatological Research Lab)	8	72	0035	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvarsan (Dermatological Research Lab)	9	67	0045	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Salvarsan (Dermatological Research Lab)	10	92	0022	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	death		
Salvarsan (Dermatological Research Lab)	11	71	0014	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+	++
Salvarsan (Dermatological Research Lab)	12	74	0008	—	—	—	—	—	—	—	—	—	+	++	++	+++	++++	death									
Neosalvarsan (German)	13	75	01	—	—	—	—	death																			
Neosalvarsan (German)	14	66	009	—	death																						
Neosalvarsan (German)	15	58	0077	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Neosalvarsan (German)	16	65	0046	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Neosalvarsan (German)	17	75	002	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	few	+	++	+++	death
Neosalvarsan (German)	18	72	0012	—	—	—	—	few	few	+	++	death															
Neosalvarsan (German)	19	72	0009	—	—	—	—	—	few	+	++++	++++	death														
Neosalvarsan (German)	20	67	0006	—	—	—	—	—	few	+	++	+++	++++	death													
Control	21	56	0	—	few	++	++++	++++	+++	+++	death																
Control	22	51	0	—	few	+	+++	+++	+++	death																	
Control	23	51	0	—	few	++	+++	++++	++++	++++	death																
Control	24	52	0	—	few	++	++	++++	++++	death																	

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[3] Enesol An Arsenic and Mercury Preparation of Uncertain Composition, Propaganda, The Journal A M A, July 26 1913, p 293 Enesol has recently been shown to be a mixture of basic mercuric salicylate and methylarsenic acid

EXPERIMENTAL STUDY OF THE SALVARSAN PREPARED BY THE DERMATOLOGICAL RESEARCH LABORATORIES

The German product and the arsenobenzol prepared by us have been tested out on animals on a number of occasions The accompanying tables represent the average result It will be seen that the two preparations do not vary materially in their trypanocidal influence Both products, in adequate dosage, are capable of producing a permanent sterilizing effect When the dose is insufficient, trypanosomes may appear in the blood at the end of two or three weeks After they appear they invariably lead to the death of the animal We have found the sterilizing dose with the *Trypanosoma equiperdum* to be about 15 mg per kilogram of body weight Neosalvarsan has proved to be inferior in its effect to salvarsan This experimental finding harmonizes with the preponderance of clinical experience

Toxicity Tests—Our product has given most gratifying results as far as the immediate lethal intravenous dose is concerned[4] In the table setting forth these experiments it will be seen that 60 mg per kilogram of body weight is almost uniformly tolerated by rabbits, and at times they will stand considerably larger doses Unless this amount is well borne, we do not regard the drug as a proper one to employ, not that its use would jeopardize the life of a patient, but rather that it would be prone to produce more severe reactive symptoms The tolerated dose in rabbits is about seven to eight times greater per kilogram than the maximum dose that is given to man

TABLE 4—TOXICITY OF SALVARSAN (GERMAN AND DERMATOLOGICAL RESEARCH LABORATORY PRODUCTS) FOR RABBITS BY THE INTRAVENOUS INJECTION OF SINGLE LARGE DOSES

Date	Product	Weight of Rabbit Gm	Dose per Kilo of Body Weight, Mg	*Immediate Results*	Duration of Life
4/ 6/15	German	1 676	70	Convulsions and paralysis	Few minutes
8/ 8/15	German	1 050	60	No effects	21 days
11/16/15	German	2 113	36*	Convulsions and paralysis	Few minutes
11/10/15	German	1 681	55.2	Convulsions and paralysis	Few minutes
4/ 6/15	Dermatological Research Laboratory (P_1)	1 425	70	Paralysis recovery	24 days
4/15/15	Dermatological Research Laboratory (P_4)	1,3-8	79	No effects	36 days
5/ 8/15	Dermatological Research Laboratory (P_1)	1 130	70	Convulsions and paralysis	Few minutes
6/ 3/15	Dermatological Research Laboratory (P_{13})	1,320	60	No effects	Over 6 months
10 22/15	Dermatological Research Laboratory (P_{17})	1,335	60	No effects	Over 1 month
10 23/15	Dermatological Research Laboratory (P_{15})	1 635	60	No effects	Over 1 month
10/29/15	Dermatological Research Laboratory (P_{19})	1 630	60	No effects	Over 1 month
11/29/15	Dermatological Research Laboratory (P_{20})	1,837	60	No effects	Over 1 month

* This tube of salvarsan No A 25893 was purchased in the open market

CLINICAL RESULTS

We have administered our arsenobenzol intravenously over 175 times without any accidents whatsoever In a proportion of cases such reactive symptoms of chilliness, headache, slight fever, nausea and occasionally vomiting may occur, but these pass away in the course of a few hours The therapeutic results we believe to be indistinguishable from those obtained with the German product A healing influence on lesions is often evident in from twenty-four to forty-eight hours In the accompanying photographs are seen the effects of one and two doses of the drug, respectively

Several hundred doses have been administered by others than ourselves, and the reports we have received correspond with our own observations

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[4] Rabbits that survive this dosage will as a rule live in apparent good health for a month at which time necropsies are made for histologic study

BERIBERI IN THE AMAZON BASIN

ALLEN M WALCOTT, MD
PORTO VELHO, RIO MADEIRA, AMAZONAS, BRAZIL

Beriberi is, as yet, a very common disease in the Brazilian portion of the Amazon Basin, and that means nearly the whole of the greatest river basin in the world The view of some foreign physicians in regard to this disease in Brazil is that perhaps beriberi here may be different from that met in other portions of the globe After having seen beriberi in San Francisco in 1906, however, and later treating and observing it in the hospitals on the Isthmus of Panama from 1907 to 1909, with a more recent experience in the employ of the Madeira-Mamore Railway Company during six years, from 1909 to the present time, in preliminary and location engineering parties, construction camps, operation camps and in the Candelaria Hospital, I am convinced that the beriberi of all these places is the same disease

The Madeira-Mamore Railway lies 1,500 miles from the mouth of the Amazon River, on the east bank of the Madeira River, in a dense tropical forest Malaria of a pernicious type, with its other form, blackwater fever, dysentery, pneumonia, ankylostomiasis, beriberi and leg ulcers are the commonest cause of patients entering the Madeira-Mamore Hospital at Candelaria, the only hospital for many hundred miles in any direction This institution is well screened and well equipped

An excellent article on beriberi conditions as seen here, by Dr Carl Lovelace,[1] former chief surgeon of the Madeira-Mamore Railway Company, is intended to show that beriberi in the Amazon Basin cannot have a food basis Under the prophylaxis and treatment as there laid down, seven doctors (one Scotchman and six Americans), some nurses and many laborers developed beriberi and were consequently either deported or buried Today, with few exceptions, the medical men of Brazil follow the same idea and have no faith in the teaching that beriberi is caused by a food deficiency

On coming to this country on vacation this September, I was much surprised to learn that many American physicians who have seen and treated beriberi in various parts of the world as well as in the Southern States still believe that this malady is propagated either by a micro-organism or is a place disease In recent conversations on this subject with some of these medical men, it appeared that there is much diversity of opinion and much faulty treatment

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[1] Lovelace Carl The Etiology of Beriberi The Journal A M A, Dec 14 1912 p 2134

The object of the present paper is to demonstrate how readily beriberi may be cured as well as caused to disappear from any locality by the application of well-known dietary principles

At Candelaria, the Madeira-Mamore Railway Hospital had 30,430 admissions during the four years ending Jan 1, 1912, and in that number there were 963 cases diagnosed as beriberi Since then construction work has been superseded by operation, with a consequent decided lessening of the number of employees and a corresponding decrease in the number of hospital admissions, but cases of beriberi are always present in the wards

As I had long been a believer that a lack in the food was the causation of this disease, a decided change was immediately instituted in the food supplied at Candelaria Hospital when I became head of the medical department of the railroad, in November, 1912 It was impossible to enforce my views beyond the limit of the medical department Previous to November, 1912, the diet had been, for the first-class employees, on the line and in the hospital tinned vegetables in considerable variety, tinned baked beans (mentioned separately particularly), tinned soups, tinned meats, tinned fish, farina de agua, fresh Irish potatoes, dried Spanish onions, a few other fresh vegetables, some fresh fruit but more often the tinned variety, ices from tinned milk and cream, fresh milk (for patients only) and eggs daily, polished rice, and the following from white wheat flour macaroni, hot cakes, bread and pastries The food, especially at the hospital, was always abundant, of much variety and very tastily prepared

The laborers and second-class patients ate polished rice daily (when not replaced by macaroni made of white wheat flour), farina de agua, one and one-half medium sized loaves of white wheat flour bread (13 ounces actual weight), tinned codfish, tinned meats, fresh Irish potatoes almost always one time daily, and fresh meat or fresh fish once daily, while sacked dried beans were frequently prepared

When I took charge the following changes were made Polished rice, macaroni, tinned vegetables, tinned fruits, tinned soups, tinned fish and tinned meats were practically eliminated It was not possible to omit the white wheat flour, as the management would not consent to buy whole meal wheat flour or rye flour First-class patients and employees received at breakfast fresh fruit, cereal porridge, fresh eggs with ham or bacon, coffee or cocoa and toast, and at lunch and dinner two or three different fresh vegetables consisting of Irish potatoes, sweet potatoes, yams, pumpkins, squashes, string beans of many varieties, tomatoes, cabbages, kale, okra, yucca (or cassava or macaxeira), baked plantains, eggplant, corn, cucumbers, radishes and lettuce From dried peas and beans and lentils appetizing dishes appeared daily Soups of many varieties prepared freshly from beriberi-preventing articles were served at lunch and at dinner The fresh fruits on the table at breakfast and at lunch were from the following papayas (papaw of the West Indies), bananas of many varieties, watermelons, muskmelons, oranges, limes, mangoes, pineapples, water lemons, coconuts and alligator pears Very occasionally tinned fruits appeared There were fresh meat twice and usually fresh fish once daily For the patients the milk was almost all fresh, but tinned milk is yet used by the well employees A herd of cows is gradually being formed so that tinned milk is doomed

For the laborers and second-class patients the same eliminations in regard to rice, macaroni and tinned stuffs were observed and the following diet provided breakfast, half loaf of bread of white wheat flour, hot coffee, and as much as the man would care to eat of the following fresh cornmeal porridge, baked or boiled yucca, or baked plantains (cooking bananas) Lunch at 11 30 a m and dinner at 6 p m were prepared from the following always a tasty soup of beans, lentils, fish chowder, bouillon, or fresh vegetables, fresh meat once or twice a day, fresh fish once a day, half loaf of bread, and two vegetables from the following ordinary dried beans and peas comprising six different varieties, and the following fresh vegetables pumpkins, yucca, Irish potatoes, sweet potatoes, yams, plantains, beans, kale, eggplant and okra Fresh fruit daily or papayas, bananas, pineapples and oranges has lately been added

From these lists it is easily seen that previous to November, 1912, the first-class employees, if large bread and pastry eaters with a fondness for rice and macaroni, would easily overstep the danger line of lack of vitamins (neuritis or beriberi preventing principles) which are contained in the bran or inner skin of some grains, beans and peas, fresh vegetables, fresh fruits, fresh milk, eggs and fresh meat

The laborers with the diet that contained large amounts of white bread, polished rice, macaroni, farina de agua and tinned meats suffered considerably from beriberi, relatively much more so than the first-class employees

By the changes in the diet, effected since 1912, beriberi has been eradicated from the medical department of the Madeira-Mamore Railway, so that there has not been so much as one case among doctors, nurses or laborers during the past three years Absolutely the same surroundings have existed at the Candelaria Hospital for the first-class employees, laborers and patients during the past five years, every one always having plenty of fresh air in the quarters, living in screened houses and drinking the same water The kitchen, screened also, has had no renovation that has modified these conditions

Beriberi is much less prevalent among the other departments as the ideas of proper food value, demonstrated in Candelaria, are gradually being taken up outside the hospital In 1913, Mr Essaba lost 40 per cent of his laborers on his rubber plantation on the Jaci Parana River from beriberi, that is, many of them died, while those patients that did not succumb were invalided down the Madeira River The plantation lies two days by launch travel from the Madeira-Mamore Railway line where it crosses the Jaci Parana River Mr Essaba, hearing that there was something new in the prophylaxis and treatment of beriberi as practiced at Candelaria Hospital, consulted me He promised to carry out instructions, and within a few weeks' time beriberi disappeared from his plantation and has not reappeared The only change he made was in the diet as outlined above

Since 1912 the treatment at Candelaria Hospital for beriberi has been changed to a strict dietary condition consisting of

1 Soups of beans and peas, fresh vegetables, fish chowder and eggs

2 Meats all varieties, but served in underdone condition

3 Eggs, usually six daily
4 Fresh cow's milk several times daily
5 Irish potatoes, beans and peas and other fresh vegetables
6 Fresh fruits
7 Rice bran two times daily
8 No bread allowed as there is no whole wheat or graham or rye bread to be had here as yet

Strychnin, one-thirtieth grain, every six hours, by mouth or hypodermically always is given, digipuratum in ampules as indicated

Formerly, persons suffering from beriberi were immediately sent down the river to the sea as soon as possible, but now, unless there is marked paralysis (and the latter cases appear only among nonemployee patients who live remote from the Madeira-Mamore medical department), they remain at hospital from five days to four weeks and are then returned to work, having been very carefully instructed in regard to diet

By this changed system of treatment many thousands of dollars yearly are saved the various commercial communities in the avoidance of steamer passages invaliding the beriberi patients to salt water as formerly practiced, an increased security of life is felt by the employees so that they are now willing to remain a reasonable time at their contracted stations, a more normal wage has appeared in place of the very excessive former scale, a great decrease in the number of deaths has been secured and a much increased daily working power has been obtained

Patients who have been treated for beriberi at the hospital are returned to the same surroundings in which the disease was contracted, and as long as they follow the dietary instructions given them, never return again with this malady In 1909 the average stay of first-class employees on the Madeira-Mamore Railway was four months The mortality of this disease at this hospital is now almost nothing, whereas previously it had averaged about 15 per cent

Since 1912 the medical department has striven to have introduced for the consumption of our employees the unpolished rice for the polished, and wheat flour with the bran not removed, for the common white wheat flour, with also a plentiful supply of rye flour Shipments of all the foregoing have recently been ordered, and it is expected that within a few months' time beriberi, the disease most dreaded by the inhabitants of the Amazon Basin, will disappear from the list of the ailments suffered by the employees of the railroad

From observations made in Brazil, it would seem that beriberi must be more common in the United States of North America than the number of cases reported would indicate

EXPERIMENTS

Farina de agua, with the Brazilians of the Amazon Basin, is more esteemed than bread, and is partaken of in quantity, especially by the laboring classes, at all meals This product of the prolonged maceration of the wild or poisonous mandioca (*Manihot utilissima*), has been shown by the following experiments carried on by me for the past year with chickens to produce in fowls a condition clinically the same as avian polyneuritis or beriberi These experiments indicate a very important source of beriberi not usually met in other parts of the world, and never previously mentioned as an additional cause of this disease in Brazil Probably the fact that the Brazilians suffered from beriberi so much more, proportionately, than the other nationalities in this region was due to the consumption of this farina de agua in addition to their other faulty diet

Experiments with chickens were conducted at Candelaria Hospital during 1914 and 1915 as follows

June 7, 1914, four cocks and eight hens all apparently in good health, were divided into four lots of three birds each and placed in adjoining compartments, one cock and two hens in each division All compartments were about 8 feet wide, 10 feet long and 7 feet high, and were well ventilated and protected The chickens had plenty of fresh water at all times

Lot 1—Food Farina de agua solely, moistened and in *dry form* Fowls at first ate this food readily, but later with much less appetite

Cock died July 25 1914, emaciated, very weak and paralyzed

One hen died May 2, 1915, emaciated, very weak and paralyzed

One hen liberated July 16 1915, was weak and emaciated, but when last seen July 28, 1915, was regaining her strength

Lot 2—Same diet as Lot 1

Cock died emaciated and paralyzed, Sept 1 1914

One hen died April 2, 1915 emaciated and paralyzed

One hen died July 10 1915, emaciated and paralyzed

Lot 3—Food Farina de agua and Brazilian rice, each on alternate days This rice is polished, but not highly as is Carolina rice

Cock died Dec 27 1914 emaciated, weak and paralyzed

One hen died in condition similar to the cock, July 14, 1915

One hen alive but very weak and emaciated, liberated July 16, 1915 died July 19

Lot 4—Food Ordinary chicken food such as grass, kale, kitchen scraps, corn cooked beans, etc.

Cock and one hen remained perfectly well and in good weight throughout Liberated July 16, 1915

One hen died suddenly, Nov 11, 1914, was fat and strong till day of death Cause of death unknown

SUMMARY AND CONCLUSIONS

Beriberi in Brazil is the same as found elsewhere

Its cause is the same lack of vitamins in the food

Its eradication and cure consist in the furnishing of sufficient vitamins in the diet

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THE TREATMENT OF PARESIS BY INJECTIONS OF NEOSALVARSAN INTO THE LATERAL VENTRICLE *

GRAEME M HAMMOND, M D
AND
NORMAN SHARPE, M D
Professor of Diseases of the Mind and Nervous System, and Neurologic Surgeon Respectively Post Graduate Medical School and Hospital
NEW YORK

Ever since the effect of salvarsan on syphilitic infection was satisfactorily demonstrated, it has been the hope of alienists that paresis, so long uninfluenced by any form of treatment, might be cured or at least ameliorated by this remedy To this effect many investigators have treated this affection by injections of salvarsanized serum into the spinal fluid and, more recently, into the cerebral fluid under the meninges Little if any benefit so far has been obtained in reducing the clinical symptoms of paresis by either of these methods It is true that the cell count has shown an appreciable diminution, and in some cases there has seemed to be some slight amelioration in the clinical symptoms, but so far nothing of any consequence has been accomplished

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* Read before the American Neurological Association, May 7 1915

* Owing to lack of space this article is abbreviated in The Journal The complete article appears in the authors reprints. A copy of the latter will be sent by the authors on receipt of a stamped addressed envelope

It occurred to us that possibly the injection of salvarsan into the cerebral ventricle might accomplish more At any rate it could not accomplish less, provided the operation could be safely performed

In the first patient operated on, Jan 12, 1915, salvarsanized serum was used The symptoms of the disease were well marked Before the operation the spinal cell count was 75, and the ventricular fluid showed 220 cells The reaction was strongly positive The technic of the operation and of all subsequent operations will be described later in this paper The patient bore the operation well, there was no reaction, and he was able to leave his bed in two days January 26, the second operation was performed The spinal fluid and the ventricular fluid were both examined, and a remarkable reduction in the cell count was noted The spinal fluid showed 10 cells, the ventricular fluid 15 cells In this instance salvarsanized serum as prepared by Swift and Ellis, which was used in the first operation, was not employed Six-tenths mg of neosalvarsan was injected directly into the ventricle There were no disagreeable symptoms following this operation, and the patient was again enabled to leave his bed in forty-eight hours February 24, the third operation was performed on the same man, and was the exact counterpart of the second operation Before the operation the ventricular fluid showed 40 cells

Another patient who also showed well-developed symptoms of the disease was operated on March 18, and in this case the neosalvarsan in the same dose was injected directly into the lateral ventricle Further operations on this patient were prevented by the patient being seriously burned in a fire at his home, owing to which he had to be removed from our care and subsequently was taken into another state and we lost sight of him

Having established that the operation could be successfully accomplished, and believing that if any benefit was to be derived at all it could be only in the early stage of the disease, we selected such a subject and performed the first operation, March 12 His reactions were strongly positive The spinal and ventricular fluids both showed a count of 5 cells, the patient was able to leave his bed in twenty-four hours The second operation on this patient was performed March 31, and the third operation, April 21 Before the third operation the reaction of the cerebrospinal fluid was negative and of the blood doubtful

These seven operations are all that we have done, but the method employed by Dr Sharpe shows that it can be successfully accomplished without any danger to the patient at all Furthermore, it will be shown in the second part of this paper that the effect of the injection when made into the ventricle has a far wider distribution than when made into the spinal fluid

In regard to the effect of this method of treatment on the clinical symptoms of paresis, not much can be said at present However, the third case holds out some encouragement The man has been under close observation ever since, he has improved mentally and physically, and is able to do work he could not do before He has become more natural in manner, quieter, and more self-composed The emotional elements which were so characteristic before the operation have disappeared, and he is certainly better than he was when we first saw him

Of course it will take many more cases than these to determine whether this operation will accomplish more than is done by the subdural and the spinal methods We have certainly shown that the operation can be successfully performed, and we believe that further experience with selected early cases will show its decided superiority from a clinical standpoint

THE INTRAVENTRICULAR INJECTION OF SALVARSANIZED SERUM

This method, the intraventricular injection of salvarsanized serum, we have carried out on three patients on Dr Hammond's service at the Post-Graduate Hospital, the first injection being given Jan 12, 1915 We must confess that we were at first somewhat disturbed at placing a quantity of a possible irritating fluid so deep in the brain substance, but when we consider that the ventricles all the way to the fourth are lined with a layer of nonabsorbing cells, there is probably not much to fear from an injection which is not actively toxic The first patient received salvarsanized serum, three injections, the second, three injections of neosalvarsan, added to serum, according to Marinesco's method, but using only 0 6 mg neosalvarsan The third patient received one injection by Marinesco's method In the next patient we intend to use Ogilvie's serum While the first two patients have shown definite changes for the better, a statement of the progress at this early date would be valueless A most surprising thing has been the lack of reaction on pulse rate and temperature One patient had a temperature of 100 4 with headache for one day following two of the injections, with no change in pulse rate The others showed no reaction whatever

METHOD OF INJECTION

Under ether anesthesia, a small skin flap, slightly larger than the trephine used, is made a little in front of the bregma and 2 5 cm from the sagittal sinus A button of bone 1 5 cm in diameter is removed and the dura incised The slender cannula with blunt point is introduced at a point free from underlying cortical vessels and passed downward and a little backward into the lateral ventricle The head of the table is lowered, and from 10 to 20 c c of fluid allowed to escape The head of the table is now raised, and a funnel containing the serum is attached to the cannula by short rubber tubing The fluid enters entirely by gravity and is very slowly introduced The cannula is then withdrawn and the scalp wound sutured In the second and subsequent injections the scalp over the trephine opening is infiltrated with novocain, and the ventricular injection is carried out as described above As the brain is not sensitive, a general anesthetic is not required in second injections The fluid withdrawn from the ventricle at each injection is sent to the laboratory for complete examination

It was at first suggested that we introduce the serum by callosal puncture Foerster and also Ballance,[8] we believe, used this method But callosal puncture is more difficult to do, there is a chance, though slight, of wounding the sinus or one of the small pial veins which occasionally bridge over to the sinus from the inner margin of the hemisphere Further, on account of the higher pressure in the ventricles, the puncture in the callosum remains patent, and much of the serum would follow the cannula out of the ventricle when it is withdrawn The chief objection to the callosal puncture is that it is not applicable to injections under local anesthesia, the falx, in common with the rest of the dura, being exquisitely sensitive

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[8] Ballance, C A Brit Med Jour, 1914 i 596

These considerations led us to adopt rather the penetration of the first or second frontal convolution which, so far as known, is a silent area

It may be urged that repeated punctures through brain substance may result in the formation of scar tissue and later trouble This may be true, yet in a hydrocephalic child on whom ten or twelve tappings of the ventricle had been done through the same area of the brain, at necropsy, macroscopic examination of the punctured area showed no formation of scar tissue, or even that an instrument had traversed it

COMPARISON OF METHODS

What are the disadvantages of the ventricular method in comparison with the intraspinal and subdural routes?

The intraspinal method is a much simpler procedure than either of the other methods, and requires no anesthetic But the serum is distantly placed and on experimental grounds but little of it reaches the cortex

The ventricular method may be considered a more formidable undertaking than the subdural, though in brain surgery, in skilled hands, ventricular puncture is a minor operation

What are the advantages, if any of the ventricular method over the intraspinal and subdural routes?

To determine, if possible, the relative amount of diffusion and rapidity of absorption by the subdural and intraventricular methods of injection, a series of experiments were carried out in the Department of Physiological Surgery of New York University and Bellevue Medical College

There were six series of experiments, one animal of each series having a solution of trypan blue introduced under the dura and the other into the lateral ventricle The quantity injected varied from 2 5 to 10 c c, and the animals were killed at periods of time varying from one hour to seventy-two hours following injection The two animals of each series received equal quantities of stain, and were killed at the same time The injections were made to conform in detail to the same procedure on man

Prof Douglas Symmers of the Department of Pathology of Bellevue Hospital Medical College examined the brains and the following is his report

> In the brains injected subdurally, the meninges of the injected side were deeply stained but the corresponding cortex was only slightly tinged and there was no penetration of the loose tissues lining the sulci The most deeply stained areas were at the base of the brain posteriorly the dye having evidently gravitated there in the subdural space before passing through the arachnoid to the subarachnoid space. The hemisphere opposite the site of the injection showed no effects of the stain, either in its meninges or elsewhere No stain was demonstrable in any of the ventricles The cervical cord and its *meninges* were deeply stained, the intensity diminishing as the cord proceeded downward On microscopic examination, the cells of the brain and cord were found to be unaffected by the dye
>
> In the brains injected intraventricularly, the stain was found to *be well distributed through the meninges and cortex* of both hemispheres, including the prolongations into the sulci, and extending forward to the tips of the frontal lobes and the olfactory bulbs The ventricles themselves, the cerebellum and the base of the brain were deeply stained In the spinal cord, the stain in the one-hour animals extended only to the midcervical region, but in the eighteen-hour animals, the stain not only penetrated to the cauda equina, but colored the tissues of the intervertebral foramina and the sheaths of the posterior root ganglia Microscopically, the *cells of the cord were unaffected by the dye*

These experiments demonstrate conclusively that solutions placed subdurally have difficulty in diffusing, and are rapidly drained out of the cranium

Apart from the subject we are discussing *these* experiments may supply the answer to the question of the direction of flow of the cerebrospinal fluid The dog injected intraventricularly with 8 c c of stain, and killed *in one hour, showed deep staining of both hemispheres* including tips of the frontal lobes and the olfactory bulbs, but the stain extended down the cord only to the midcervical region

Another dog, under the same conditions, and receiving the same quantity of stain, killed in one hour and twenty minutes, showed the same staining of the brain, but in the cord the stain extended to the upper dorsal region

A third animal with the same quantity of stain killed in two hours showed the same staining of the brain, and in the cord the stain extended to the lower dorsal region This was not due to lack of stain, for stain escaped when the meninges were opened at necropsy It was due to lack of time for the stain to spread, for in the fourth dog injected, under the same conditions, but with less stain, 6 c c, and killed in nineteen hours, the stain had spread over the brain entirely and over the cord throughout its entire length and along the roots of the cauda These experiments show, at least in dogs, that the direction of flow of cerebrospinal fluid is *from the ventricles up over the cortex* and then down over the cord

What are the advantages, then, of the intraventricular method?

Placing the serum in the lateral ventricles is placing it subarachnoidally at once, and also insures an even distribution over both hemispheres in juxtaposition to the cortical cells before it is drained out of the cranium Furthermore, the ventricular puncture obviates the lumbar puncture which is necessary in the subdural method, before the serum is introduced Again, the ventricular method brings the serum in contact with tissues that are not reached by the subdural route, namely, the ventricular system itself, and the base of the brain That it is necessary the serum should reach all accessible parts of the brain is shown by a case of Cushing and Sladen,[9] who reported the case of a child *with cerebrospinal* meningitis and subsequent hydrocephalus, in whom "after four months the diplococcus was found to be still living in the dilated ventricles, whereas the organisms had been killed off in the subarachnoid fluid" Also, *in our first* patient, lumbar puncture gave 75 cells per cubic millimeter, and the next day ventricular puncture yielded 220 cells per cubic millimeter This may or may not indicate involvement of the ventricles in the disease process

Finally, as shown by Mott,[10] the perivascular sheath spaces which extend between the neurons deeply into the brain substance, and drain it of waste products *communicate directly* with the subarachnoid space A serum, therefore, placed beneath the arachnoid membrane, comes into contact with the brain tissue, and this end is, we think, achieved best by the ventricular method

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[9] Cushing H and Sladen F J Jour Exper Med 1908, x, 548

[10] Mott F W Lancet London 1910 ii 1 79

How many injections should be given?

We believe that in this we should be guided both by the serology and by the clinical symptoms But if the serology does not show steady progressive improvement under treatment, one should be guided rather by the clinical symptoms The number of injections naturally will vary with different patients and according to the extent and the severity of the disease process An unfavorable reaction to injection has been negative so far in our patients We intend to gradually increase the amount of salvarsan in the serum, and perhaps in this way reduce the number of injections necessary

CONCLUSIONS

1 In comparison with the deadly nature of paresis, the hazard of intradural treatment, by whatever method, is of little moment

2 On experimental and clinical grounds, both the subdural and intraventricular methods are superior to the intraspinal route, in the treatment of paresis

3 From an experimental and theoretical standpoint, the intraventricular method is superior to the subdural route, and we believe it to be safer

4 The intraventricular method, with careful technic, and a due regard for the anatomy of the brain and the delicate nature of the tissues one is invading, is, we believe, practically free from danger

5 If the freedom from unfavorable symptoms so far achieved in intraventricular injection can be maintained, it will be imperative to so treat paresis in its earliest stages, with greater chance of marked improvement and perhaps permanent arrest of symptoms

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THE POSSIBILITY OF RECOVERY OF MOTOR FUNCTION IN LONG-STANDING HEMIPLEGIA

A PRELIMINARY REPORT

SHEPHERD IVORY FRANZ, Ph D, Hon M D, LL D
Scientific Director Government Hospital for the Insane
MILDRED E SCHEETZ, M S, M D
Assistant Physician
AND
ANITA A WILSON, A B, M D
Assistant Physician
WASHINGTON, D C

It is well known that in the hemiplegias due to cerebral lesions, there are usually early recoveries of function for different segments when the other acute symptoms of hemorrhage, or embolism, or trauma, subside The trunk muscles are affected the least in a hemiplegia, and there may be a complete return of voluntary control of them shortly after the cerebral accident The legs also frequently recover to a great extent, and although in many cases the distal segments may show evident signs of functional impairment, the larger muscles for the thigh and knee movements may be used with a surprising degree of ease and force Voluntary control of the arm movements is less likely to return, but if there is a return it is, as with the leg, better for the proximal than for the distal elements These recoveries ensue within a few weeks or months and are normal They result from the absorption of the clot, or the loss of the inhibition (or diaschisis to use the term employed by von Monakow) Subsequent improvements also take place, and at times a patient recovers his ability to perform a variety of movements in an apparently normal manner "After two years no further gain is to be expected"[1] After the early improvement which has been mentioned, "the case will be practically stationary,"[2] and the so-called residual paralyses are to be observed There are also secondary results The limb which at first was flaccid may become flexed (in the case of the arm) or overextended (as happens with the leg) In the arm segment, for example, the fingers are flexed the wrist is flexed and pronated, there is flexion at the elbow, and the arm is adducted at the shoulder joint These constant flexions result in contractures, with limitation of the possible passive movements at the joints, and the contractures are a deformity "The appearance of contractures implies lasting functional loss wherever they develop"[2] This is the usual statement of the course of cerebral hemiplegia

The results of experimental lesions in animals agree with the observations on man, with the exception that the paralyses are not permanent in such animals as dogs, cats and rabbits, and there is some doubt regarding the permanence of functional loss in monkeys and in the higher apes What difference exists between man and animals appears to be one of degree or completeness of functional loss and of time of motor recovery In animals the residual symptoms are more commonly those of asthenia, or of ataxia, or of paratonicity, rather than complete motor inabilities and contractures

A few casual observations made some years ago and results of animal experiments by one of us (F), together with experimental results of others, suggested the possibility that conclusions regarding the permanency of paralysis from cerebral accidents were neither accurate nor scientifically grounded, and that more attention should be paid to possible improvement in these cases In order that this view might be put to test, and that any results that might be obtained should not be open to criticism on the score that we were dealing with the normal early recoveries which can be expected in cerebral hemiplegics, the cases which were selected were old cases in which, in accordance with the dictum of neurologists, further improvement might not be expected All of the patients to a considerable extent, and some to an extreme extent, had developed contractures It was our object to determine, if possible, whether or not any improvement could be brought about, and if so to what extent All the cases were selected for us by other physicians, who were asked to send young persons, if possible, but no other limitation was placed on the choice except the ability of the patients to go to the laboratory for the tests During four months we have had opportunity to work with five patients, who had been committed to this institution and who exhibited different degrees of paralysis and also different mental abnormalities The arm segment being the most affected in all cases, was chosen for the treatments

Three general methods were employed The first was that of massage and vibration For the muscles which were strongly contracted effleurage, or stroking, was employed. The contracted muscles were stroked in order to reduce the hypertonicity, if possible. For the same reason the hand was grasped and the arm shaken or vibrated until there had been a distinct loosening of the muscles. The extensors were also percussed (tapotement) to give them the benefit of the mechanical stimulation, and the nerves of the arm were also stimulated by deep pressure.

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[1] Church and Peterson Nervous and Mental Diseases, Ed 8 Philadelphia W B Saunders Company, 1914 p 223

[2] Church and Peterson Nervous and Mental Diseases, p 222

All kinds of movements of the arm were also produced passively when possible, special attention being given to extensions on account of the continued flexions. It was not found possible to pronate or supinate the arm in some cases at first, and the amount of passive extension was limited during the early treatments. In some cases much pain was experienced in these procedures.

The first two methods were employed in order to make possible the third, which was that of trying to get the patients to use voluntarily the extensor muscles in some simple activities. In some cases voluntary movements on the part of the patients could not be obtained for some weeks, but in all cases these were eventually obtained, as is indicated below.

HISTORIES AND RESULTS

Brief case histories of the patients with indications of the results of the treatments are as follows:

Case 1.—*History*.—Man aged 58, a former telegraph and telephone lineman, twenty years ago fell from a pole and fractured his skull in the left parietal region. This accident resulted in a right hemiplegia with an epilepsy. Four operations have been performed on him and a large piece of the skull has been taken away. After some of the operations he became more normal but was not entirely well. For the past seven years on account of his paralysis, etc., he has been unable to work, although for some time after his accident he was employed as a street sweeper. There are a spastic paralysis of the right side, contractions of the flexors of the forearm and hand, and adduction of the arm. The right ankle is almost immobile. The right side of the face is involved and saliva drools from the mouth. There is no apparent muscular atrophy. He is aphasic both motorially and sensorially, for he cannot name objects and his conversation is very limited and he does not appear to understand much that is said to him. The Wassermann reaction with the blood serum was negative. Mentally there is an almost complete amnesia. He replies to questions regarding his wife, children, business, home, etc., 'I forgot it,' but he has an oft-repeated series of sentences referring to his condition, which he uses as explanations of everything, and which he says whenever he does not apparently understand. Thus: "I feel all right. I can sleep, I can eat when I can get it, but it's the arm from here down." He complied with simply expressed requests but not with more complicated ones. It may be that the apparent sensory aphasia is only a kind of amnesia, the patient forgetting almost immediately what is said to him. After he had been in the laboratory about twenty times he was asked if he had ever been in it, and replied that he had not. He did not remember having had any exercises with his arm. This is a case in which the amount of cooperation was at a minimum, and whatever effects were produced could be referred to the daily work rather than to any efforts made by the patient independently.

Results.—At the time work with this patient began he could not make voluntary movements of his arm, hand or fingers. His arm was bathed daily with hot water an hour before he came to the laboratory. Massage and passive movements were used and the arm at the shoulder was forcibly abducted by means of a sling connected with a pulley at the ceiling. The first voluntary movement which we tried to get him to make, besides the gross arm movements, was that of opening his fingers after a ball was placed in his hand. The number of seconds which it took to loosen his fingers was noted. At first this movement was almost impossible for him, but after a comparatively few trials he was not only able to perform this movement but was also able to pick up the ball. The time of grasping and of letting go of the ball gradually decreased, although it was observed on more than one occasion when the number of these tests was large, thirty or more consecutive trials on one day, that the later trials took much longer than those at the beginning of the series. Not infrequently also it was observed that the lengthening of the time of grasping would be much prolonged, and there appeared to be a kind of spasm of the flexors. The quickest time for grasping and dropping the ball in ten trials was thirty-seven and a half seconds, but usually the ten trials ranged from sixty to about eighty seconds. The improvement in the ability of this patient to perform those movements on which he had been practiced was very noticeable not only with respect to the time of performance but also with respect to the accuracy of movement. No measure of the accuracy was made, and the conclusions regarding this factor are, therefore, due to the casual observations which we made and are qualitative.

Case 2.—*History*.—Woman aged 36, nine years ago during childbirth had an apoplexy, but subsequently bore two children at intervals of a year. She became aphasic at the time of the apoplexy but has regained some of her speech ability. There is a right-sided spastic paralysis, more marked in the arm than in the leg. At the time the present work began, the forearm was flexed on the upper arm, and the wrist and fingers were flexed with the exception of the forefinger, which was slightly extended. There have been convulsions dating from the apoplexy, although not at first numerous; they occurred as often as eighty-eight times in one month, but recently have been very few in number. The Wassermann reaction with the blood serum on three occasions has been negative, single positive and trace, respectively. The cerebrospinal fluid was negative; there were 2½ cells per cubic millimeter. Mentally, she was depressed when admitted to the hospital but has greatly improved, although depression is still present and prominent at times. She gets very angry at her inability to express herself and at her motor inabilities. She cooperated well in the work, doing all that was asked of her, although at times rather surlily.

Results.—When the tests were begun the patient could not raise the arm voluntarily in any direction without a considerable degree of flexion at the elbow, which with a maximum effort developed into a clonus. Rotation of forearm and extension of the wrist were impossible; wrist adduction and abduction very slight; dynamometric tests of the grip showed no power. Passive movements and the different forms of mechanical exercise of the muscles, especially of the extensors, were performed daily, and the patient was urged to perform similar simple movements voluntarily. The latter were done slowly, in a jerky, uncertain manner, and they often ended in a clonus. The trunk muscles were used to help out the movements of the arm in the performance of a given task and the larger arm muscles helped out the movements of the hand and fingers. During the efforts to move the paralyzed arm segments, the paralyzed leg frequently went into a clonic state. The ball test used with Case 1 was also used with this patient, and with results of considerable interest. At the time she was first able to grasp and to drop the ball she performed the movements in eighteen and nineteen seconds, respectively (average of three successful trials in ten trials). Subsequently after she had acquired the ability to extend the fingers better the fingers appeared to be flaccid and the time for grasping and for dropping the ball greatly increased at first (three to four minutes), but improvement took place gradually and at the present writing she averages four and twenty-five seconds, respectively, in the successful trials for grasping and for dropping, although at times she is able to drop the ball in two seconds. Grip is now slight but apparent with the dynamometer, averaging about 4 kilograms. The patient is able to use a pencil for drawing lines although not enough coördination is present to have them straight. The other movements are performed more steadily than at first, and with greater excursions, and they are not accompanied by clonic movements as in the beginning

Case 3—*History*—Man, aged 30, a former soldier, in 1909 when in the Philippines had a fever the nature of which is not known, and owing to this the patient says he became paralyzed and aphasic At that time the diagnosis of "gumma in the left cerebral hemisphere" was made, but the reason for this definite diagnosis is not clear At one time the Wassermann reaction with the blood serum was weak, and twice subsequently it was negative The patient exhibited a typical right-sided hemiplegia with aphasia, although he can to a certain extent make his wants known and can say a few words respecting common objects There was a hemiplegic gait, the foot was practically useless, the arm segment showed marked contractures Forcible passive extension at the elbow and wrist and movements at the shoulder could be made only with considerable "crackling" at the joints, and the patient complained of great pain when these movements were extreme The fingers and hand could be extended only by the application of great force The aphasia of this patient is largely motor, although he understands some things only after repeated explanations, and he cannot read Mentally, he is said to be demented, but the aphasic condition may account for this statement because it is difficult to determine how much he knows and how much interest he has in his surroundings He appears to be in the "moron" class although on account of the aphasia his mental status is difficult to determine At any rate, it is certain that his intelligence is slight and that he was poorly educated He is apparently very lazy and cooperates very slightly

Results—For three months this patient had passive movements and massage, but during that time he could not perform any except the grossest kind of movements of the arm He was unable to grasp objects and to make extensor movements of the hand and forearm, but at the present writing is gradually, but very slowly, obtaining some control both of the forearm movements and the finer movements of the hand and fingers By using the thumb and the ball of the hand he can hold a tennis ball, and by extension of the thumb he can release it He can also hold in a clumsy fashion a pencil, and can draw with it lines on a sheet of paper The lines are made mostly with the larger arm muscles At first the lines were not continuous, and were similar to the lines which a small child makes Now, the lines are continuous and are straighter They show great variations in force by the differences in darkness and breadth This patient was also practiced on the "piano" board, an apparatus made of contiguous squares which were to be pointed out consecutively by the forefinger, each square by a separate movement In this exercise the patient cannot use the extended forefinger, since he is unable to extend it sufficiently long for this purpose His hand is strapped to a board in a normal position, and a cardboard pointer is fastened to the board opposite the index finger At first he was able to make in five minutes sixty movements with his right hand when it was guided with the sound left hand, later, without the help of the left but with the cooperation of the trunk muscles, he was able to make 112 movements in five minutes, and at the present time, when the sound left hand and the trunk muscle assistance is taken away by strapping him into a chair and restraining these movements, he is able to make 120 movements with the right arm alone in five minutes No measurements of the amount of movement about the arm joints were made for three months on account of the apparent inability of the patient to perform the movements voluntarily At the time the first measurements were made, the movements were found to be slight, and after a month all had increased in extent. The following figures give the angular amounts of movement of different kinds, the first figure being the amount after three months' passive movement and massage, the second being the amount of movement after the succeeding one month's daily voluntary efforts Shoulder forward, 28 and 98, backward, 25 and 44 Elbow flexion, 94 and 107, rotation, 0 and 90 Wrist flexion, 4 and 33, abduction, 16 and 24, adduction, 23 and 41 Grip (by dynamometer) was 4 kg before and 6 8 kg after the month's work All these measurements are averages of five trials.

Case 4—*History*—Man, aged 36 had severe headaches in 1907, and later a convulsion with right facial and arm paralysis and aphasia Several months later there was added a paralysis of the leg At present there is almost complete right hemiplegia with aphasia The arm is flexed at the elbow and is spastic and slightly atrophied Little motion is possible A year after the paralysis of the leg an attempt was made to get the patient to use the leg with the aid of crutches, but this did not succeed, perhaps owing to the lack of cooperation The aphasia at the time of the present series of tests was practically complete He could copy some printed words, but could not say them He understood practically nothing, and could not repeat what he heard Mentally, he has varied, usually he is very emotional, and apparently very appreciative of the attention shown him, and he cooperates when he is made to understand by signs what is wanted of him On account of his lack of speech understanding, it was not possible to determine how much he understood of what was wanted, but his actions in an otherwise normal individual would indicate an overzealousness

Results—This patient was practiced on holding and dropping a tennis ball, and on the "piano" apparatus, as well as being treated with massage and passive exercises Not so much improvement was manifest in this patient as in the others with whom we have worked, but this may be due to the short time that work was in progress with him Some improvement was noticeable however in the time for the performance of the above-mentioned tasks Work with this patient was discontinued temporarily on account of lack of time, but it is expected that we shall begin again at a later date

Case 5—*History*—Woman, aged 58 The history of this case is very incomplete, for it is not known when the hemiplegia began It probably began several years ago, since she exhibited contractures It is stated that she had at different times, "fits," after which she could not properly speak When she entered the hospital she showed motor aphasia with apraxia[3] There were evidences of hemiplegia, her gait was a characteristic one, the right side of the face was paretic, and face movements could not be performed properly The leg could be used, but at the time of her entrance to the hospital she was not able to walk well without assistance The arm could be used for some of the gross movements, but there was a flexion at the elbow and wrist and fingers There was hypertonicity of the muscles and the reflexes on the right were exaggerated There was no atrophy The Wassermann reaction was negative Mentally, she has been depressed on account of her not being able to go home, but during the time of the present work she has been more cheerful She cooperated best of all the five patients, and was enthusiastic except at those times when the passive movements caused her pain

Results—We shall not repeat the data showing the improvement of this patient for the simpler methods of adduction abduction, pronation, etc, of the different arm segments, for they resemble greatly those of Case 3 The movements of this patient not only became more free but they were also executed with greater ease and rapidity than when the tests began After about eight weeks of the simple exercises, when she had learned to use the thumb and forefinger together, she was given a piece of muslin turned over for hemming and a needle and black thread to determine her ability to sew Her movements in doing this work were very awkward at first, as might have been expected, and they were slow At first also the movements were comparatively large, and this is shown by the fact that she averaged in the first week only 21.2 stitches in five minutes, and these extended over an average space of 122 mm This work was continued daily for five weeks and during the last week she averaged 33 5 stitches in five minutes, these stitches covering an average space of 78.5 mm. To practice the extension of the fingers and the combined coordinated movements of the arm and hand she was also given tennis balls to throw into a waste paper basket, which was set against the wall at a distance of about 6 feet from her. The first day she was able to throw into the basket only 2 balls of 25, but after four weeks averaged 15.8 out of 25. Shortly after she had learned to use the hand she was given a fan during the warm weather and she was urged to use it with her right hand. She grasped the fan properly, but could not make the necessary combinations of hand and arm in her first trials, but in a few days she succeeded so well that she was able to fan herself with the so called paralyzed arm and hand better than with the left arm and hand.

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[3] A report of this aspect of the patient's condition has been made by A B Evarts Report of a Case of Aphasia and Apraxia, New York Med Jour 1914 c 1193

COMMENT

The results which we have obtained with these five patients show very clearly the possibility of a return of function in a paralyzed segment even after the paralysis has existed much beyond the time limit set by some neurologists for possible improvement. As far as the results from these cases go we have the right to say that the time limit beyond which improvement may not take place cannot be set. Furthermore, there appears at present no indication of a limitation of the quantity of improvement which may be attained by suitable and sufficiently prolonged therapeutic measures. It is also to be noted that these five cases differ with respect to the locations of the cerebral lesions (as far as these can be determined by clinical as contrasted with postmortem examination). One of the cases (Case 1) is doubtless a purely cortical case, another (Case 5) has been diagnosed as cortical, and the other three cases have signs which indicate more plainly capsular lesions. The examination of our records shows that improvement has taken place almost equally well whether the lesion be cortical or capsular.

The underlying causes of the cerebral lesions differ. Case 1 is definitely traumatic, Case 5 is probably arteriosclerotic, Case 4 is definitely syphilitic, Case 2 is probably syphilitic, and Case 3 is only possibly syphilitic. The most marked and quickest improvement took place in Case 5, and the least in Cases 1 and 4. We do not consider that these facts reveal any relation of special disease to the return of function, both because we have too few cases of any one kind for a definite conclusion and because we find great individual differences in cooperation of the patients, which latter fact appears to us to be more important. Since the diseased conditions which we mention, arteriosclerosis, syphilis and traumatism, are the most frequent causes of hemiplegias and other cerebral palsies, it would appear likely that most cases of cerebral paralysis can be treated so that improvement will take place.

Moreover, it should not be forgotten that the patients with whom we have dealt are patients who have been committed to an institution for the insane. They are, therefore, not mentally normal, and we could not expect and, in fact, we did not get the amount of cooperation from them which can rightly be expected from mentally normal patients. Our experience with the rapid improvement of Case 5 leads us to the belief that improvement may be rapid when the active cooperation of the patient can be obtained, but that without this cooperation, or with a minimum of it, improvement may be produced but slowly and to a slight degree. This is shown by the slowness of the patient in Case 3, who has been mentioned as lazy and noncooperative.

The facts which we have given briefly, and which we hope to add to and to publish in full at a later date, point to the conclusion that patients with any kind of cerebral paralysis should not be immediately consigned to the chronic, or incurable, or irrecoverable class, but should be intelligently dealt with just as any surgical case, and the effort should be made to relieve if not to cure. Every effort should be made to put into use with these patients all the means at our command to bring about a restoration of function or at least an amelioration of their helplessness. There appears to be no good reason why the discomfort and the deformity of contractures in cases such as we have worked with should be permitted to exist. Because of its popular pseudotherapeutic connotation we hesitate to use the term "mechanotherapy," but we would urge that properly used massage, passive movements, hot baths and packs, followed or accompanied by attempting to obtain on the part of the patient voluntary muscular contractions, be employed in all such cases. We recognize that treatment of the character mentioned cannot be given by any one, for, to speak only of massage, the ordinary slapping and rubbing which a patient may get at the hands of some well-meaning (but in this respect ignorant) relative or nurse may do more harm than good because the flexors may be stimulated much more than the extensors and the flexor condition be exaggerated. It is necessary to have some knowledge of the muscles involved, to limit treatments to those muscles which should be treated in this manner, and to see that the voluntary movements when they can be produced are directed to improvement in the movements which are in need of improvement. Elaborate apparatus is not needed, for much may be done with common objects which are to be found in any household. The principal requirement is a knowledge of the structures involved and their functional relations, with some ingenuity in the devising of means of bringing about movements of certain characters which should be practiced, and also different means which may help to stimulate the patient's interest and to show plainly to him the course of his improvement.

The facts are also of interest in a theoretical way in relation to our conception of motor cerebral control. If after the so-called motor cortex is destroyed, or the fibers in the internal capsule sectioned, by hemorrhage or by an anemia, there is a possibility of return of motor control, we shall have to modify our conceptions of how the different parts of the brain act in the production of movement. Experimental and clinical results are already at hand to indicate that there are great anatomic and functional differences in different brains and that the relations of the motor cortex to the limbs are not so simple as they have been supposed to be.[4] For recoveries of functions such as we have described there are many possible explanations. The simplest is that we deal not with motor inabilities but with exaggerated asthenias. This is an explanation of some of the motor deficiencies of animals from which the motor cortex has been excised. We should then look on the different forms of cerebral paralysis as exaggerated difficulties of movement and not as inabilities to move. We may also explain the recoveries as due to the assumption by another portion of the brain of the function of the motor cortex and the motor fibers. This was a favorite explanation of the motor recoveries of animals after ablation of the motor area on one side, it being assumed or concluded that the other hemisphere assumed the function of motor control on both sides of the body That this explanation will not hold, in animals at least, is shown by the fact that animals which have recovered motor power of the limbs after the removal of the motor cortex of one hemisphere do not lose this motor ability if the motor cortex of the other cerebral hemisphere be subsequently destroyed Another possibility is that the cerebral motor cortex may not be necessary for the production of movement but that this cortex is only regulatory It has been shown that if the motor cortex on one side be excised, a considerable number of the pyramidal fibers at the medulla on that side do not degenerate, and it would seem that, assuming the pyramidal fibers to be wholly motor in function, some of the motor impulses may arise in portions of the brain other than the precentral cortex The facts which we have already collected indicate that lesions of the motor cortex or of the upper part of the pyramidal tract in man do not abolish function, but put the function in abeyance until such time as the appropriate condition is present for the production of movement We should probably not speak of permanent paralyses, or of residual paralyses, but of uncared-for paralyses This we say because many of the conditions which we have met appear to resemble, if they are not real, phenomena of disuse, rather than actual inabilities

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[4] See, for example, Franz, S. I.: Symptomatological Differences Associated with Similar Cerebral Lesions in the Insane and Variations in Distribution of the Motor Centers, Psychol. Monog., 1915, pp. 16.

THE MANAGEMENT OF PNEUMOTHORAX OCCURRING AS A COMPLICATION OF NEPHRECTOMY *

WILLIAM C QUINBY, M D
Fellow of the American College of Surgeons
BALTIMORE

In cases demanding nephrectomy there not infrequently are found conditions external to the kidney itself which make an accidental opening of the pleural cavity very difficult to avoid Indeed, such injury to the diaphragm may occur in certain instances even under the most expert hand and with the most skilful dissection It may even occur during an operation of the so-called subcapsular type The cases in which this accident is most apt to arise are those in which the perirenal tissue has been greatly infiltrated with inflammatory products, thus fixing the kidney closely to its surroundings Dense adhesions to the diaphragm are more commonly found on the left side, owing to the fact that the kidney is normally higher on this side, and not in close relation to the liver During the removal of such a kidney, the procedure necessary for exposure may easily make an accidental rent in the diaphragm This most often occurs at the upper angle of the lumbar wound by traction either on the retractor or on the kidney mass, while an endeavor is being made to deliver the upper pole

Incision of the pleura may also happen in the presence of a rudimentary twelfth rib, in which case the operator may overlook this rib altogether, and call the eleventh the twelfth Such a mistake can be avoided by examining the ribs before operation, either on the patient or on the roentgenogram

While it is true that the pneumothorax caused in the manner referred to is usually small in amount and devoid of any special dangers except those of possible infection, this may not be so in each instance It seems also to be true that the genito-urinary surgeon is, in many instances, content to sew up the tear in the diaphragm as soon as it is discovered without any attempt closely to formulate to himself just what the possible contingencies of air in the chest may be, and what should be done to meet them

The severity of the functional disturbances following pneumothorax depends on the size of the opening in the parietal pleura If no adhesions are present, the lung collapses, but if the hole is smaller than the cross-section of the trachea, it will only collapse slowly, step by step, with each succeeding inspiration During the time required for this, it is very probable that the inadvertent rent in the diaphragm will have been recognized and closed But even though the lung be entirely collapsed, in a case in which the hole is smaller than that of the glottis or trachea, the pressure differences on either side of the mediastinum will not be so great as to cause any dangerous lowering of respiratory function in the great majority of cases Adequate ventilation will be maintained by an increase in the depth and frequency of respiration There will be no dyspnea or cyanosis, and no special burden thrown on the heart

It is in those instances in which the wound in the pleural sac is sufficiently large to allow free action of atmospheric pressure, that is, larger than the cross-section of the trachea, that phenomena follow dangerous to life In such instances the air enters rapidly, and in the side bearing the pneumothorax there results a continuous positive pressure This compels the mediastinum to bulge toward and from the well side with each succeeding respiration, and it is under such conditions that the active lung cannot expand enough to meet the demands of life The oxygen supply is diminished while the carbon dioxid is piled up, causing dyspnea and cyanosis of increasing severity

The latter condition is not very often caused by tears of the diaphragm such as are made in the manner referred to in this communication, though, to be sure, such tears, from the very manner of their occurrence, must always be of indeterminate length and size But whether the tear be large or small, it is my conviction that conditions within the thorax should be restored to the complete physiologic normal at as early a moment as is conveniently possible Should the lesion of the thorax be a large one and the patient show alarming signs of deficient ventilation, forceps such as are used for a sponge carrier, or ones with moderately blunt bite, should be pushed into the chest and made to grasp the collapsed lung By making steady, moderate traction on this, the mediastinum can be supported, and the uninvolved lung given a chance to carry on respiration till the tear can be sewn small enough to relieve the alarming symptoms The forceps are then removed, and the sewing finished

Similarly also, a small tear should be closed as soon as discovered If time permits, it is well to tack a bit of fat or muscle tissue over the line of suture, so as to make air-tight closure more speedy Closure of the diaphragm being ended, the operator may then proceed with the removal of the kidney, but before the final dressings are applied and the patient returned to bed, or even sooner if symptoms of insufficient ventilation persist, the air in the chest should be removed by aspiration This is best done by puncture low on the

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* From the James B Brady Urological Institute, Johns Hopkins Hospital

side in the midaxillary line of the thorax. The trochar should be given a slant to correspond with the arching diaphragm, and suction should be made until, as read by a manometer attached to the aspirator, the chest shows a negative pressure of minus 7 to minus 10 millimeters of mercury. The latter procedure is important because it not only reexpands the lung to its normal position immediately, thus making atelectatic areas through collapse of the alveoli less likely, but also, if bacteria have entered the chest cavity at the time the pneumothorax occurred, these may become circumscribed in their action by the plastic apposition of visceral and parietal layers of pleura.[1]

REPORT OF A CASE OF ESOPHAGOTRACHEAL FISTULA

B. B. FINKELSTONE, M.D.
AND
T. LONG ELLIS, M.D.
BRIDGEPORT, CONN.

There are two forms of congenital occlusion of the esophagus, one in which the upper and lower parts of the occluded esophagus are united by a fibrous cord, and the other in which the lower portion opens into the trachea or one of the bronchi. The latter appears more usual (Osler).

St. Clair Thomson says that imperforation appears to be an arrest of development rather than a pathologic process in the fetus, while Losee explains the causes of esophagotracheal fistula, embryologically, by the fact that the proximal and distal portions of the esophagus have different sources of origin. The buccal cavity, pharynx and upper extremity of the esophagus develop from the ectoderm, and the intestinal tract, including the distal portion of the esophagus and respiratory apparatus, from the endoderm. Fistulous communications between esophagus and trachea are almost always situated at its bifurcation, and the conclusion may be drawn that the membrane separating the esophagus and trachea close last at this location.

According to statistics collected by McKenzie, sixty-two cases of esophagotracheal fistula have been reported in the literature. Since then Losee[2] has reported two in the new-born.

CASE REPORT

History.—A secundipara was delivered of a full-term female child by Dr. F. L. Day, labor was normal. Within a few hours, attention was attracted to the baby who became asphyxiated and was relieved by removal of large quantities of thick mucus from the mouth. The baby nursed well, but food regurgitated in a very short time as the infant would gag and choke and seem asphyxiated. Relief was obtained by passing a catheter, sometimes through the nasal orifices and sometimes through the mouth and removing the mucus. During the last days the mucus was blood-stained, owing, no doubt, to the passing of the catheter. Meconium was passed for the first three days, but there was no bowel movement on the fourth day and no report of stool on the fifth day. As no roentgenogram was taken, the diagnosis of stricture of the esophagus was made. (Ellis had seen a similar case last year of which no report was made.) The temperature on the fifth day was 102, when the child died of inanition and bronchopneumonia.

No operation was tried because gastrostomy seems to be of no avail, as milk introduced into the stomach is apt to be discharged into the trachea. Holt says, "Complete obstruction in the esophagus is almost of necessity fatal, the patient dying from inanition two or three days after birth." In the case reported by Losee, however, the patient lived for ten days.

Necropsy.—This revealed a full-term child, on appearance perfectly normal except that the nares were filled with clotted blood, owing no doubt, to the passing of the catheter. The abdominal cavity seemed normal. The intestines were inflated with gas. The stomach was tied off and cut at the pylorus. The esophagus was dissected as far as the trachea. The bronchi were cut at the bifurcation, and the trachea and esophagus removed *en masse.* The lungs showed minute hemorrhages on the surface. A catheter passed through the proximal end of the esophagus showed that it ended in a blind pouch at the fifth tracheal ring from the bifurcation. At the third ring from the bifurcation the distal end of the esophagus opened into the trachea causing a stricture at this site. Macroscopically there was apparently no continuity of the esophagus between the third and fifth rings, not even a fibrous cord. The remainder of the esophagus to the stomach seemed normal.

COMMENT

St. Clair Thomson says, "Congenital imperforation of the esophagus is generally regarded as a rare condition, but probably it is more frequent than has been thought, the comparative rarity causing it to be overlooked or symptoms attributed to some other cause."

Symptoms generally manifest themselves early. In this case attention was attracted to the infant in a few hours because of marked accumulation of mucus in the throat with gagging and asphyxiation. Vomiting is the chief symptom, and its occurrence should attract attention if the child is vigorous, if it sucks strongly and eagerly and if ingestion of food leads to coughing and choking.

Not being familiar enough with the minute anatomy of the new-born, we do not feel competent to say that the site of the various dilatations of the trachea change from birth to adult life. According to Braune and Stahel, the trachea is slightly expanded at the bifurcation, while in this case there was a stricture on the posterior wall, internally, below the esophagotracheal fistula. This stricture of the trachea was not due to pressure of the aortic arch, as the arch is normally situated a few tracheal rings above this site.

The probable explanation of this stricture is that there was an overgrowth of cells, either endodermal or ectodermal or a combination of the two, at the junction of the esophagotracheal fistula, causing stricture of the trachea.

Heat and Bacteria.—Many of the pathogenic organisms can grow only within a very narrow range of heat, and it is remarkable that their optimum temperature should correspond with that of the human blood. Considering their sensitiveness to temperature it is not surprising that microbes should be affected by climate and season and even by changes of weather. Most pathogenic organisms take on a more intense activity in hot countries and their virulence is no doubt affected by excess or deficiency of heat in the individual. It follows from these facts that if the temperature of the human body could be temporarily raised a few degrees the microbes of many parasitic diseases, if present in the body, would be destroyed and this is no doubt the intention and the effect of pyrexial reactions.—R. Fortescue Fox, *Clinical Journal,* Nov. 3, 1915.

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[1] For detailed information on the subject of pneumothorax the reader is referred to the following:
Garré and Quincke Lungenchirurgie Ed 2 1912.
Quinby and Morse Experimental Pneumectomy the Application of Data so Obtained to the Surgery of the Human Thorax Boston Med and Surg Jour 1911 clxv 121.

[2] Losee Bull Lying-In Hospital New York January 1914.

THE DIFFERENTIAL DIAGNOSIS OF LESIONS OF THE LABYRINTH AND OF THE CEREBELLUM *

J GORDON WILSON, M A, M B
Professor of Otology, Northwestern University
CHICAGO
AND
F H. PIKE, Ph D
Assistant Professor of Physiology, Columbia University
NEW YORK

In this review we shall confine attention to three symptoms common to lesions in the labyrinth and in the cerebellum, namely, nystagmus, vertigo and ataxia We shall not attempt to discuss adequately these three symptoms in their various modifications by extension of the disease or its effects to surrounding structures, but shall chiefly consider lesions which are strictly and definitely labyrinthine and lesions which are strictly and definitely cerebellar We hope thus to be able to emphasize the points common to each and to note essential differences, if any, and thus arrive at the intelligent understanding essential to diagnosis

When one talks of a lesion definitely labyrinthine and definitely cerebellar one immediately thinks of experimental lesions As Dejerine[1] has pointed out, clinical lesions are not often confined, so far as their effects go, wholly to the cerebellum An abscess of the cerebellum is accompanied by the production of toxins which act, through the medium of the circulation, on neighboring or even on remote structures, a new growth in the cerebellum brings about changes in the general intracranial pressure, resulting in changes in the cerebral circulation, and, usually also, in an increased pressure of the cerebrospinal fluid[2] The increased pressure of the cerebrospinal fluid will in itself often lead to vertigo, quite apart from the destructive effect of the neoplasm, and the physical pressure of the tumor on the medulla oblongata and the floor of the midbrain may give rise to other phenomena not directly related to the structures involved in the lesion While the clinical picture may be necessary for diagnosis, the experimental picture must not be neglected in drawing conclusions with reference to normal function, and disturbance of function must be the basis for a rational diagnosis

While much of what is presented here is based on experimentation on animals done by us, it has received sufficient verification in man both in cases we have observed and cases recorded by others — often, as in the case of cerebellar nystagmus, without a full appreciation of the significance of what is recorded[3]

When we consider how close anatomically and physiologically the labyrinth is to the cerebellum, and when we recall that many of our labyrinthine cases when they come under observation have affected the posterior cranial fossa with more or less involvement of the cerebellum, and that so many cerebellar lesions are complicated by pressure on the vestibular nerve, it is little wonder that the most careful of observations leave us often hopelessly involved It is for this reason that we feel tempted to try to outline the essential differences of labyrinthine and of cerebellar lesions

It will be well here to attempt to define the physiologic function of the labyrinth and of the cerebellum This appears necessary because so much confusion has arisen concerning the primary disturbance and the remote effects associated with lesions in these organs

The primary function of the labyrinth is to give information of the change of position of the head in space[4] Its end-organ signals all movements of the head or, more correctly, all acceleration of movement Rapid changes of aspect of the head in space demand prompt and rapid motor reactions to preserve equilibrium or to break a fall A moment's thought will lead us to see the wide-reaching range of its reflex associations Thus it must be in touch with all the mechanism which tends to readjust the body and be able to call into play compensatory movements to maintain equilibrium There is no other sense organ in the body which will give this information quite so efficiently as the labyrinth, and hence, there is always a certain amount of permanent deficiency of motor response after total loss of the otic labyrinths

As a result of this we find (1) that the labyrinth is in such direct touch with the eyes that each movement of the head may have, when necessary, such compensatory movements of the eyes as are necessary to maintain the normal relation of the eyes to the horizontal[5] This, as we[6] have shown, is a direct reflex response independent of the cerebellum, with the probable object of insuring that retinal images shall not be disturbed by each movement of the head (2) We find that the labyrinth is intimately connected with the body musculature so as to prevent loss of balance When the usual limit of stimulation of the labyrinth is overstepped there are developed among other symptoms, nystagmus, and a fall to the side of the lesion, or to the side of the less intense stimulation

The fundamental action of the cerebellum is not so easily expressed nor are investigators agreed with regard to its full significance Sherrington would place it as the ganglion of the proprioceptors, that is, those end-organs or receptors which are buried in the body and adapted to react to stimuli developed in their neighborhood in the organism itself[7] It thus becomes a great coordinating center for the proprioceptors, and its destruction renders difficult or impossible the associating of movements directed to the same end

Babinski says that normally the cerebellum exercises a control action on voluntary movements Mills[8] expresses his conception thus "The fundamental symptom in cerebellar disease is asynergy" — defining synergy as "the power or faculty by which movements more or less complex, but functionally definite, are associated in a special act or acts" "Movements are mismeasured, giving dysmetry or hypermetry because the patient with cerebellar disease is unable motorially to associate the different elements of such movements" He quotes with approval Ferrier's idea of the cerebellar activity "Every form of active muscular exertion necessitates the simultaneous cooperation of an

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* Read before the American Otological Society, May, 1915

[1] Dejerine Semiologie des affections du systeme nerveux, Paris, 1914, p 436 Luciani Human Physiology, London, 1915, iii 457

[2] Frazier, C H The Cerebrospinal Fluid in Health and Disease, The Journal A M A, April 3, 1915, p 1121

[3] For example, Stewart and Holmes Brain, 1904, xxvii, 529

[4] Wilson, J Gordon, and Pike, F H Some Considerations on the Physiology of the Otic Labyrinth Arch Int Med, December 1914 p 911

[5] Sherrington The Integrative Action of the Nervous System New York, 1906, p 337

[6] Wilson, J Gordon and Pike, F H The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and its Relation to the Motor System, Philosoph Tr Roy Soc, 1912 cciii, 127

[7] Sherrington The Integrative Action of the Nervous System, pp 348 and 130

[8] Mills, Charles K., and Weisenburg, Theodore H Cerebellar Symptoms and Cerebellar Localization Including Kinematographic Observations on Cerebellar Phenomena, The Journal A M A, Nov 21 1914, p 1813

immense assemblage of synergic movements throughout the body to secure steadiness and maintain general equilibrium" These ideas are fundamentally alike—so we will not be far from the current views when we say that the cerebellum is of importance to correlate such unconscious sensations from muscles and joints as assure the continuity and proper degree of motor activity in all our movements In our opinion, Luciani's objections to considering the cerebellum as the great central organ for the maintenance of equilibrium[9] have not been satisfactorily met

Mills classes as special symptomatic manifestations of asynergy, hypermetry adiadokocinesia and tremor As symptoms resulting from asynergic efforts asthenia (lack of motor power), atonia and ataxia Since the loss of strength is never complete, Sherrington[10] characterizes these conditions as parasthenia and paratonia

One sharp distinction between cerebellar function and labyrinthine function lies in the fact that the cerebellum is an afferent station for the proprioceptive impulses and the labyrinth is not Impulses simply originate in the labyrinth The cerebellum lies in one efferent path from the cerebrum to the cord, the labyrinth does not The labyrinth is a peripheral sense organ

LABYRINTHINE NYSTAGMUS

Nystagmus occurring as a result of a labyrinthine lesion consists of two phases, a slow lateral deviation, labyrinthine in origin, followed by a quick return movement, cerebral in origin This idea, expressed by us in former papers, has been confirmed by all our subsequent experiments, still unpublished On the basis of these experiments, we feel safe in saying that the impulses leading to the quick movement in labyrinthine nystagmus come from the cerebral hemisphere on the side to which the slow deviation of the eyes is directed The quick movement fails when the cerebral hemisphere to the side of the slow deviation of the eyes is extirpated These movements are synchronous in both eyes and vary definitely in direction with the labyrinth which is affected. In lesions produced experimentally or due to pathologic processes in the labyrinth, the movements are primarily horizontal, and it is the horizontal movement that is of importance The rotatory movement apparent at times, so far as our present knowledge goes, does not appear to have much diagnostic value, and insistence on it appears to us to confuse the issue When observed this rotatory movement is designated according to the direction of the quick movement at the upper end of the vertical iris meridian In nystagmus, after experimental lesions, the rotatory movements are of secondary importance and are most noticeable very early and again as the nystagmus is passing away

In experimental work the deviation is always to the side of the lesion We have never seen a case in which the deviation was to the side opposite the lesion so long as one labyrinth remained intact At first there is at times a slight vertical action, especially on the side of the lesion, the eye deviating slowly down, but even here it tends to the side of the lesion This stage, however, passes in a few hours As has been noted elsewhere,[11] in the very early stages the deviation can be made to go to the side opposite the lesion by mechanical pressure

An important question here arises as to whether we ever have a labyrinthine lesion with deviation away from the side of the lesion, that is, with the quick phase to the side of the lesion Theoretically, it is easy to reply that in the early stages of acute labyrinthine disease we have a serous effusion into the osseous labyrinth resulting in an irritation or stimulation within the semicircular canals which will produce such a deviation and nystagmus All the observations we have made leave no doubt in our minds that the normal stimulus for the end-organ is pressure But the pressure which arises in the course of a labyrinthine effusion is diffuse and different from the pressure arising from the definitely directed physiologic pressure of the fluids in the canals The pathologic effusion in such a small confined cavity rapidly becomes general if it be not so from the first, and results in a depression of activity We have no evidence that generalized pressure will act on the nerve terminals to cause an irritative lesion

In a serous labyrinthitis the effusion may be into the perilymph or the endolymph On general principles one would say that the evidence at present shows that in many cases the increase is in the perilymph, especially in cases which result in complete recovery In serous labyrinthitis the deviation is to the side of the lesion, the quick phase is to the sound side In the cases recorded with the slow deviation to the sound side during the course of an acute or chronic otitis media or following a mastoid operation but without the presence of a fistula, the opinion of Alexander[12] is that this indicates the period of irritation, presumably from serous effusion into the labyrinth It appears to us, however, that such cases are more correctly to be regarded as an irritation of an inflamed vestibular nerve, which inflammation may be outside the osseous labyrinth In the cases of nystagmus to the diseased side which we have observed occurring either during the course of an acute otitis media or after a mastoid operation, the deviation away from the side of the lesion had occasionally such additional symptoms (pain over the region of the fifth nerve, or paresis of the sixth or seventh) as pointed to some distinct involvement of the petrous temporal

There is an interesting table given by Ruttin[13] of the direction of the quick phase of nystagmus He there tabulates two varieties of labyrinthine lesions in which *on looking to the right or to the left* the general rule of slow deviation to the side of the lesion is not followed These are (1) circumscribed labyrinthitis in which the quick phase is directed to the diseased side or to the sound side or to either side—to the right on looking to the right, to the left on looking to the left, and (2) diffuse suppurative latent labyrinthitis in which also the quick phase is directed to either side on looking to that side

In circumscribed labyrinthitis the irregularity of the nystagmus is associated with a membranous labyrinth more or less intact but with a fistulous opening in the bone Ruttin[14] thus exemplifies it 'A patient with chronic middle-ear discharge has complained for some time of vertigo and perhaps also of tinnitus On examination there is more or less deficiency of hearing but not complete loss, the fistula test is positive, the caloric reaction is present, spontaneous nystagmus is present, and often toward both sides, that is, on moving eyes to right or left voluntarily" In the diffuse suppurative latent labyrinthitis we have a mechanical irritation of the nerve often associated with caries of the petrous temporal

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[9] Luciani Human Physiology London 1915, iii 448 466

[10] Sherrington In Schaefer's Textbook of Physiology 1900 ii 903

[11] Wilson, J Gordon and Pike, F H The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and their Relation to the Motor System Philosoph Tr Roy Soc. cciii 127 160

[12] Ruttin Klinik der serösen u eitrigen Labyrinth Entzündungen Vienna 1912 p 83

[13] Ruttin Note 12 p 39

[14] Ruttin Note 12 p 35

The explanation in these chronic cases of this irregularity in the labyrinthine reaction on looking to the side is not very obvious, but we suggest that it is due to irritation of an inflamed vestibular nerve A suggestion of Luciani[15] is perhaps applicable here Claude Bernard, in his experiments on the nerves of recurrent sensibility, was unable to get his most pronounced sensory effects on stimulation of the peripheral portion of the ventral nerve roots immediately after the nerve roots were exposed in the spinal canal, the sensory effects were noticeable only when stimulation was made at least one hour after the nerve roots were exposed Bernard attributed this delay to the time required for the recovery of the nerve trunks from the shock resulting from division of the ventral roots Luciani is not inclined to credit this hypothesis of shock, but inclines to the belief that the nerve trunks become more sensitive to stimulation in the course of a few hours because of the development of the inflammatory reaction in the exposed nerve roots It is common knowledge that inflammatory processes in the joints or elsewhere often render the nerve endings of affected regions more sensitive to mechanical pressure, but it is equally well known that specialized nerve endings, for example, the olfactory endings, suffer early from inflammatory processes While it is possible that the vestibular nerve trunks might be rendered more susceptible to stimulation by the development of the inflammatory reaction along their course, inflammation within the ampullae would be more likely so to injure the cristae acusticae as to alter the normal threshold for pressure from the canals as a stimulating agent Under such conditions, it may be that head movements or increase of pressure in a localized area, which normally would not produce vestibular irritation, may become an efficient cause of vestibular irritation

We believe that the nystagmus in both directions, namely, in looking to the right the quick phase to the right, the slow to the left, and in looking to the left the quick phase to the left and the slow to the right, can be best explained by our hypothesis of two distinct sets of nerve fibers in the vestibular nerve for reasons already given This hypothesis, as we have already explained, is based essentially on Lee's findings that the differences in direction of movement of the eyes varies with the intensity of mechanical stimulation of the vestibular nerve endings, and our own observations on the results of stimulation when but one labyrinth is present

According to this hypothesis the vestibular nerve contains two groups of nerve fibers functionally distinct

(a) A numerous group of fibers excited by a strong stimulus turning the eyes to the opposite side

(b) A less numerous group of fibers more easily excited and hence affected by a weaker stimulus turning the eyes to the same side

In an inflammation of the left vestibular nerve both sets of fibers are affected and stimulated On looking to the left, a cerebral act, the left internal rectus and the right external rectus are relaxed so far as cerebral impulses are concerned The labyrinthine impulses are, however, still coming in to these muscles since there is no reason to suppose that cerebral action has any effect on the inflammation along the course of the vestibular nerve

Sherrington[16] has shown that electrical stimulation of the cortical area for movement of the eye muscles will, as an example, bring about contraction of the left external rectus and the relaxation of the left internal rectus, and that the mechanism for the inhibition of the antagonistic muscles is subcortical From this it will be seen that the suppression of the quick phase in labyrinthine nystagmus on voluntarily turning the eyes in the direction of the slow phase is associated with the relaxation of the opposing muscles whose tension we believe is the primary cause of the quick movement In any case of cortical relaxation or inhibition of a muscle, the relaxation is never complete, and the muscle is never slack A skeletal muscle always gapes when cut transversely In the lesions under consideration (say of the left labyrinth), in looking to the left the stimulus coming to these relaxed fibers from the stimulation of one set of fibers from the left labyrinth causes a contraction of these muscle fibers and a slow movement to the right Similarly, in looking to the right the left external rectus and right internal rectus are relaxed so far as cerebral impulses are concerned and the stimulus from the other set of left labyrinthine fibers causes a slow movement to the left There thus results a double nystagmus on directing the eyes to the right or the left

We have so far only considered pressure on the terminal organ in the labyrinth In lesions involving the vestibular nerve intracranially, causing pressure on or irritation of the nerve, there may be a deviation away from the side of the lesion Many of the so-called deviations of nystagmus are cerebellar or jointly cerebellar and labyrinthine and as such do not come within the scope of this paper

CEREBELLAR NYSTAGMUS

We have much to learn concerning cerebellar nystagmus For instance, we do not know sufficiently accurately the localities in which lesions may occur, yet be associated with no nystagmus, we have not sufficient data to differentiate between an irritative and a destructive lesion There are numerous experiments which show that cortical irritation of the cerebellum with the electrical current produces no effect so long as care is taken to limit the excitation to the cortex Luciani, Risien Russell and Horsley have shown that stimulation of the dentate nucleus produces deviation of the eyes to the side of the nucleus stimulated

The various articles descriptive of cerebellar nystagmus appear to us to be lacking in that clearness and definiteness which we are arriving at in labyrinthine nystagmus Here one is trammeled by observations made in cases which are not definitely cerebellar as well as by lack of appreciation of some of its characteristics We do not propose to present more than one quotation to exemplify this, and this we take from the school which has done much to advance the clinical applications of the physiologic facts although, it must be confessed, with some violence to these facts Neumann[17] in his work on cerebellar abscess says

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[15] Luciani Physiologie des Menschen, Jena, 1907, iii, 309, Human Physiology, London, 1915 iii, p 204

[16] Sherrington Proc. Roy Soc London, 1893, liii, 412

[17] Neumann Otitic Cerebellar Abscess London, 1909 p 18

> The focal symptoms of disease of the cerebellum are due, on the one hand, to lesion of Deiter's nucleus and the afferent and efferent tracts, and on the other hand, to lesion of the secondary tracts, which belong to the same side of the body, and stand in relation to the co ordination of muscular sense The lesion of Deiter's nucleus produces vestibular nystagmus, vertigo, and vestibular ataxia As regards nystagmus, this is always of a rhythmical character, and shows on the whole the characteristic of a vestibular nystagmus, thus according with the description given by Barany The differentiation of vestibular nystagmus of cerebellar origin from that originating peripherally in the semicircular canals is made on the one hand by careful functional testing of the vestibular apparatus similar to that carried out by Barany in our clinic, whilst, on the other hand, the course of the disease and the accompanying symptoms assist in the diagnosis

If the description here given sums up the current opinion of cerebellar nystagmus we cannot agree with it Exception has to be taken to each paragraph If the first sentence means anything it means that cerebellar nystagmus is due to lesions of Deiter's nucleus and appears based on the erroneous idea that the labyrinthine nystagmus is dependent on an anatomic course through the cerebellum This we have shown is erroneous So far as the second is concerned of course a lesion of Deiter's nucleus will produce vestibular nystagmus because, as has been shown, it lies on the central path between the afferents from the ear and the efferents to the eye We do not believe that cerebellar nystagmus shows on the whole, the characteristics of labyrinthine nystagmus Unfortunately this teaching has formed the basis for most of our text book articles It lacks sound anatomic and physiologic basis and is not in keeping with experimental results More than that it is not in keeping with exact clinical observations

Experimental work early impressed on us that if there be one thing characteristic of cerebellar nystagmus it is that it is not comparable to labyrinthine nystagmus It differs from it (a) in uniformity of direction, and (b) in character

Some years ago we stated that cerebellar nystagmus was essentially ataxic and we have seen no reason to alter that opinion Its distinctive feature is its character — its oscillatory nature approaching toward an ataxia of the eye muscles With the animal at rest it is lessened or may disappear It is increased by fixation — especially at the beginning and during the intensity of the fixation In other words, it is to be regarded as an asynergia Behind glasses, when the patient ceases to focus, it tends to become less marked, and here again differs from labyrinthine This is in keeping with what has been said above in regard to the known function of the cerebellum A lesion here will produce an incoordination of movement, and movements of the eye muscles offer no exception

In direction the slow deviation may be away from the side of the lesion though it may be to the sound side, depending on whether we are dealing with an irritative or destructive lesion But it tends to be irregular in the plane of its direction with the head at rest

VERTIGO

Vertigo, as we have stated elsewhere,[18] is the confusion resulting from the coming into consciousness of afferent impulses concerned with orientation in space which ordinarily are associated (integrated) but now for some reason have become dissociated We will not concern ourselves here with the variety of sensations which are embraced under the term vertigo, the majority of which are too indefinite to be of value in diagnosis We will only refer to vertigo associated with the sensation of rotation It is well to emphasize that in vertigo we are dealing with a subjective sensation and as has been said elsewhere[19] "One notes how difficult it is to get a distinct history of subjective sensations even from intelligent patients, and further, how much less reliable are the subjective sensations of apparent movement of external objects"

The law applicable to apparent rotation following stimulation or destruction of the labyrinth is that apparent rotation of oneself is always in the direction of the rapid phase of nystagmus There is not the same unanimity in regard to the apparent rotation of objects "In postrotary visual dizziness Barany sees the visual field oscillate from side to side in both directions, whereas Mach, Breuer, Delage and most other observers see it whirl contrariwise to the preceding actual rotation and Helmholtz saw it whirl sometimes with and sometimes contrary to, the direction of the preceding rotation"[20] Our observations confirm the findings of Holt that as a rule the postrotatory apparent rotation of objects is contrariwise to the preceding actual rotation, that is, in the direction of the quick phase of nystagmus If no nystagmus be present the apparent rotation of self points to the side of the lesion[18]

Less uniformity exists in cerebellar cases On this point careful observations were made in a series of forty cases of tumors involving the cerebellum by Stewart and Holmes[21] The direction of the subjective movements were so constant that they were led to regard this as of serviceable diagnostic value They found that

> (1) In both intracerebellar and extracerebellar tumors the sense of displacement of external objects in front of patients is from the side of the lesion to the opposite side. Thus if the tumor be on the left side, the apparent movement of objects is from left to right.
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> (2) In intracerebellar tumors the subjective rotation of oneself is always from the side of the lesion to the healthy side, that is in the same direction as the apparent movement of external objects
>
> (3) In extracerebellar tumors the subjective rotation of oneself is always from the healthy side toward the side of the lesion that is, in the opposite direction to that of the displacement of external objects

It will be noted that the apparent displacement of external objects is similar to that generally occurring in labyrinthine lesions and that the apparent rotation of oneself varies with the position of the tumor The relationships in intracerebellar tumors are the same as in labyrinthine lesions The diagnostic importance of the direction of subjective movements in cerebellar lesions has been questioned,[22] but even if not generally applicable they offer suggestions of value to aid in the diagnosis

ATAXIA AND DISORIENTATION

When we talk of ataxia we mean incoordination of movement—a disturbance in the particular organ itself When we talk of disturbance of orientation we mean that the organism has a special mechanism

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[18] Wilson J Gordon and Pike F H Vertigo The Journal A M A. Feb 13 1915 p. 561

[19] Wilson J Gordon and Pike F H Note 18 p 563

[20] Holt On Ocular Nystagmus and the Localization of Sensory Data During Dizziness Psychol. Rev November 1909 p 388.

[21] Stewart and Holmes Brain 1904 xxvii 525

[22] Lewandowsky Handbuch der Neurologie Berlin 1910 i 843

which adjusts the normal relationship of the body and its movements to its position or change of position in space The organism has numerous peripheral organs which signal in any change of position in a particular part—the ear, eye, muscles, joints, etc As the head is the most important segment of the body, so without doubt the labyrinth and the eyes are the most important receptive organs for the sensations necessary for orientation This is seen in the difficulties our labyrinthineless dogs have in walking with the eyes bandaged and the difficulties that deaf mutes and labyrinthineless dogs have in swimming In the latter case, in the absence of contact with solid bodies and in a medium in which appreciable differences of external pressure are excluded, the labyrinth is the only agency capable under all conditions of giving adequate information of the change of position of the head in space The action of the eyes is apparently less general and slower but this we will discuss more fully in a later paper

All these inflowing messages have to be correlated to produce a harmonious action of the whole organism—and probably the cerebellum is one organ which participates in this This correlation no doubt involves the afferent fibers which the cerebellum receives from the vestibular nerve, and its very close relationship with the vestibular nuclei in the pons and medulla While it is probable that the cerebellum participates in the integration of the impulses from the labyrinth with others from the periphery into the higher uniform function of maintaining a given orientation in space, yet certainly the cerebellum is not the sole central organ for orientation In passing it may be noted that it is this disturbance with the inflowing impulses from the periphery that is the scientific basis of attempts to localize particular cerebellar areas

In both cerebellar and labyrinthine lesions there is a deviation to one side in walking — to the side of the lesion if it is unilateral With the eyes open the patient corrects this, with the eyes shut, he may correct it, but usually, and especially in cerebellar cases, corrects too much, and then deviates to the sound side This deviation has nothing to do with ataxia It is a disturbance of orientation in space, is involuntary and appears in its most pronounced form in animals The sensation of such involuntary movements which is common in cerebellar disease must correspond to objective involuntary movements

When we consider the disturbances of orientation and the ataxia common to cerebellar and vestibular lesions we find, as the most obvious symptom, that the patient stands with the feet spread wide apart, that there is inability to stand on one foot, that the gait is uncertain and that the body tends to turn to the right or the left A discussion of the variations of muscular strength or of muscle fatigue does not come within the scope of this paper

Labyrinthine lesions differ from cerebellar (1) in the existence of Romberg's sign in labyrinthine lesions, (2) variations in the attitude of the head influence the lack of equilibrium of the body in labyrinthine and not in cerebellar lesions, (3) an affection of the labyrinth does not definitely involve those movements of isolated parts which result in dysmetria, (4) in labyrinthine disease movements of rotation or disorientation are not so readily perceived

(1) Romberg's sign The disturbances of equilibrium during walking and standing are increased, in labyrinthine disease, by shutting the eyes Suppression of visual control does not have the same effect in cerebellar lesions Sight is of less use to the cerebellar patient in maintaining the erect position although probably of some use and there are said to be cerebellar cases in which Romberg's sign is positive,[23] but as Dejerine insists, they are rare Romberg's sign is rare in destructive lesions of the cerebellum, as atrophy or sclerosis, rather frequent in abscesses, tumors or in lesions which affect other structures in their vicinity, and one may seriously question whether, in the cases of which Barany speaks, the cerebellum alone is involved, either directly or indirectly In labyrinthine disease standing on one foot is more difficult, especially on the foot on the side of the lesion This, however, is of no value if the patient has a peripheral sensory disturbance

(2) Relation of the attitude of the head to the disturbances (*a*) Goltz and Ewald showed many years ago that the pigeon deprived of its semicircular canals is not able to maintain its balance if the position of the sustaining base is changed This experiment has been repeated by many workers in other animals, and on it is based von Stein's goniometric test This consists in placing a patient with bandaged eyes on an inclined plane, the slope of which may be varied It is found that in labyrinthine cases the patient does not perceive, or perceives but slowly, the changing inclination of the plane and lets himself fall (*b*) In labyrinthine lesions the direction of falling, with the patient in the Romberg position, bears a direct relation to the plane of the nystagmus Barany has elaborated certain rules to show how the attitude of the head and the quick phase affect the fall, but, as we pointed out some years ago, there is a general rule for all positions of the head, namely that the patient falls in the direction of slow phase of the nystagmus And, as we have shown, even with the cerebellum injured, the labyrinthine reaction, nystagmus, attitude and falling, can be elicited by labyrinthine stimulation As Barany pointed out there is not the same connection between the direction of nystagmus and the direction of falling in cerebellar affections

(3) Lewandowsky[23] says that the particular character of cerebellar ataxia is the disturbance in standing and walking, *"Storung der Aufrechten Haltung und des aufrechten Ganges"* This results in those oscillations, that drunken gait, the titubation vertigineuse of Duchenne, so characteristic of cerebellar disease and not seen in labyrinthine lesions Further, the cerebellar patient shows dysmetria, his movements lack their proper proportion or measure in time and space, they are too rapid and too abrupt and miss their aim, the initial impulse is too strong, the speed too great, the arrest too late

The ataxia apparent after labyrinthine removal is due to a failure of the proper adjustment of the muscles necessary to the maintenance of equilibrium and orientation, owing to a failure in the accurate perception of the change of aspect of the head in space To put it briefly we might say that whereas the cerebellar ataxia is dynamic the labyrinthine is chiefly static

(4) We have sufficiently referred to the fact that in disease of the labyrinth the movements of orientation and disorientation are not perceived so readily On this subject no more remarks are called for at this time

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[23] Lewandowsky Handbuch der Neurologie, Berlin 1910 i

In this discussion on the differential diagnosis of labyrinthine and of cerebellar disease we have not referred specially to the fact that in labyrinthine disease the physiologic action of the labyrinth can be shown, by the usual caloric and rotation tests, to be lost This fact we feel is so appreciated by neurologists and otologists that it is not necessary to dwell on it

We have therefore, in pure labyrinthine and pure cerebellar cases sufficient data at our disposal to decide the question of differential diagnosis It is difficult in the mixed cases If, however, we can exclude with these data the purely local labyrinthine and the purely local cerebellar we have gone some distance to locate the lesion, and can proceed intelligently to cases that involve both structures

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THE RELATION OF HEAT TO SUMMER DIARRHEAS OF INFANTS *

ADRIEN BLEYER, M D
ST LOUIS

From observations that have been made on laboratory animals, diarrhea would not appear to be one of the characteristic effects of heat Dorlencourt and Schreiber produced death in dogs by exposing them to high temperatures without observing diarrhea Von Salle observed that diarrhea might or might not occur when young puppies were exposed to high temperatures Aron subjected monkeys to the direct heat of the sun, and caused death without observing diarrhea Hiller, in tabulating a large number of so-called heat-strokes in man, found that diarrhea occurred in less than half

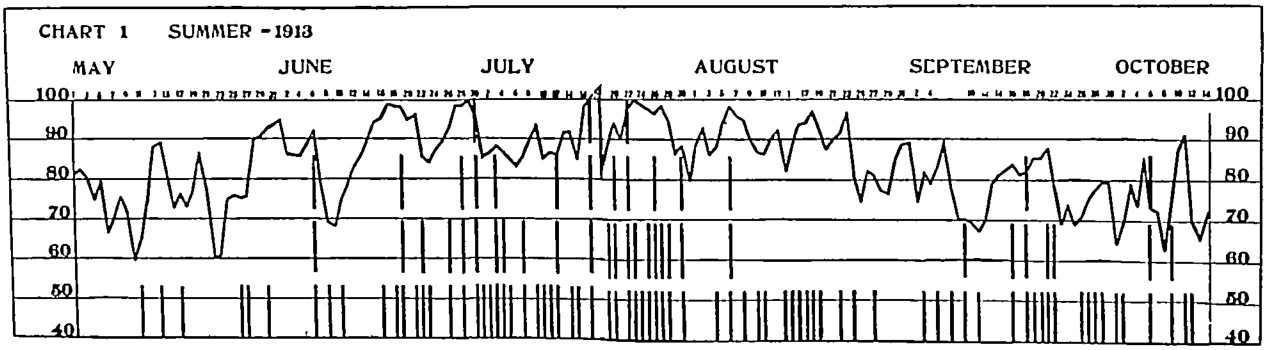

Chart 1 —Diarrhea and temperatures 1913 In this chart and Chart 2 the irregular horizontal line denotes maximum daily temperatures from May 1 to October 15 (U S Weather Bureau St. Louis) Each upright line at the lower margin indicates a case of acute diarrhea on a certain date additional cases are indicated by lines added above

TABLE 1 —SUMMARY OF CHART 1 SUMMER OF 1913 EIGHTY SIX ONSETS

Temperatures	No of Onsets	Per Cent
From 60 to 70	3	3 5
From 70 to 80	8	9 3
From 80 to 90	30	34 9
From 90 to 100	45	52 3

That heat is capable of disturbing physiologic health may, however, be admitted Disturbances in man may occur at temperatures of 75 F (Rubner) Disturbance of the normal respiratory exchanges denoting acceleration of the rate of metabolism has been noted at about this temperature (Sutton) If moderate exercise is taken, symptoms of heat retention may occur at 78 F (Haldane) As the environmental temperature rises, heat production becomes less (Langlois) A rise in body temperature may be produced by heat (Kleinschmidt, Heim, Genersich, John) Acetone and blood may appear in the urine, suppression of urine or even anuria may occur, there is a fall of blood pressure, the pulse rate rises, and the body surface becomes hyperemic, to be followed by pallor, unconsciousness and shock, completing the well-known picture of "heat-stroke"

TABLE 2 —SUMMARY OF CHART 2 SUMMER OF 1914 ONE HUNDRED AND THIRTY SIX ONSETS

Temperatures	No of Onsets	Per Cent
From 60 to 70	5	3 7
From 70 to 80	16	11 8
From 80 to 90	46	33 8
From 90 to 100	69	50 7

In the case of infants, these observations have peculiar significance because of the much greater surface area of the infant compared to body weight than is the case with the adult and the correspondingly greater need for rapid loss of heat This is in the proportion of about 3 1 That metabolism is more rapid in infants than in adults is shown by the relatively larger gaseous exchanges, the carbon dioxid coefficient normal to the adult rising in the infant almost to a point corresponding to the differences in surface area That the heat output of infants increases as the weight decreases was shown by Langlois, and more recently by Murlin and Hoobler in the case of weak and atrophic infants The latter writers found this difference greater in the second half of the first year than in the first half Variot and Lavialle observed that clothing may interfere sufficiently with heat-loss to be noted by the calorimeter This point,

TABLE 3 —SUMMARY OF CHARTS 1 AND 2, SUMMERS OF 1913 AND 1914 TWO HUNDRED AND TWENTY TWO ONSETS

Temperatures	Onsets Per Cent
From 60 to 70	3 6
From 70 to 80	10 8
From 80 to 90	34 2
From 90 to 100	51 4

TABLE 4 —PERCENTAGE INCIDENCE COMPUTED ON A BASIS OF ONE HUNDRED DAYS

Temperatures	Onsets Per Cent
From 60 to 70	11
From 70 to 80	14
From 80 to 90	29
From 90 to 100	46

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* From the Department of Pediatrics, Washington University Medical School.

* Read before a meeting of the St. Louis Medical Society, May 31 1915

concerning the dangers of overclothing in summer, was the substance of a study by Helmholz, in which it was found that infants possess a capacity of withstanding high atmospheric temperatures provided they are not overburdened with clothes

It is not possible to say whether or not diarrhea is one of the symptoms of heat disturbance Very likely it is not, and it would seem that if a child who is suffering with what has been called heat retention is not fed, he will probably not have diarrhea, but if he is fed, and under such circumstances does have diarrhea, it would seem that the heat retention rather than the food was the cause of the diarrhea, because in the absence of high temperatures food does not exhibit this power, even when more or less highly contaminated with bacteria and their products (Rietschel) Liefmann's observation, that diarrheas occur three times as often in summer as in winter among breast-fed babies, has peculiar significance in this connection, as has also the observation of Holt and Park that diarrheas among tenement babies occur with great frequency among those fed condensed milk, which is not ordinarily considered a highly contaminated food

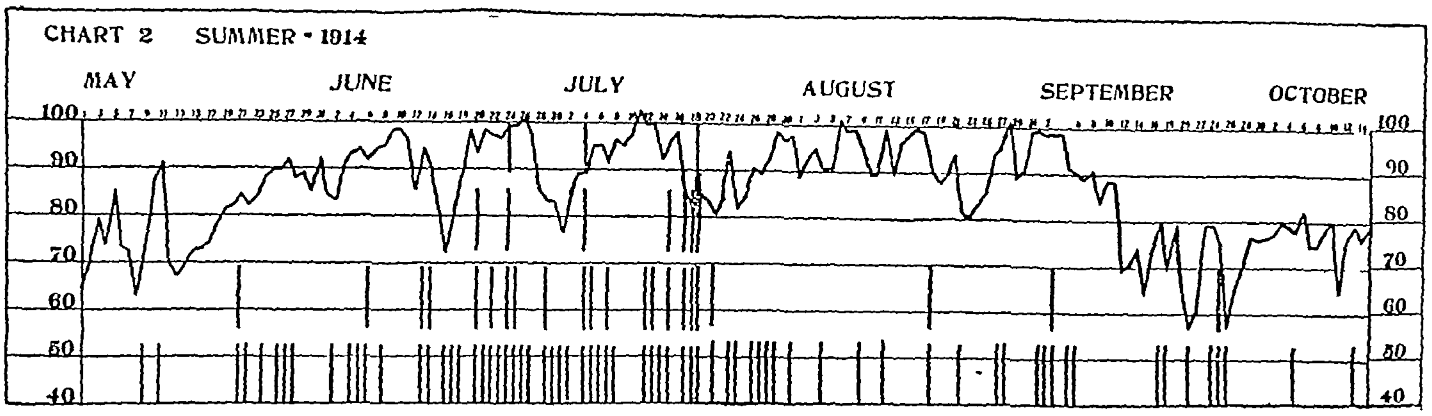

Chart 2 —Diarrhea and temperatures, 1914

Because of these somewhat contradictory observations a study was undertaken to determine whether or not, among the babies of the poor, a relation between the higher temperatures and the day of onset of diarrheas could be made out, no regard being paid to the feeding of the infants until the data collected had been summarized In the summer of 1913, eighty-six instances of acute diarrhea were collected in which the day of onset could be satisfactorily obtained[1] In the summer of 1914 an additional 136 cases were collected, sixty-two of them, I wish gratefully to acknowledge, by Dr T C Hempelmann

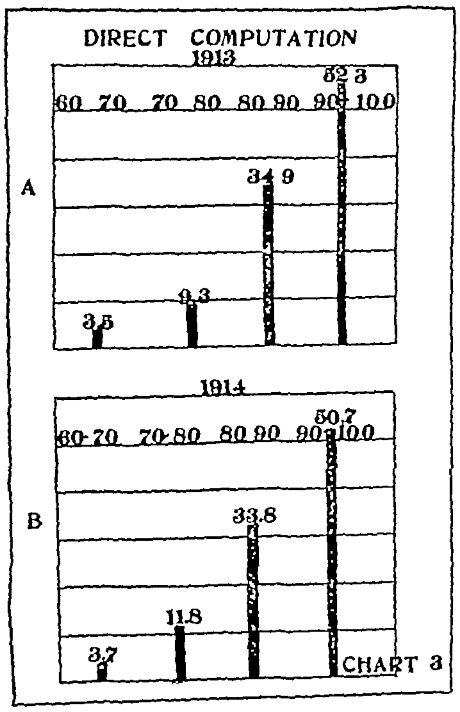

Chart 3 —Diagram showing the relation of heat to the onset of diarrheas among dispensary infants in St. Louis (Tables 1 and 2)

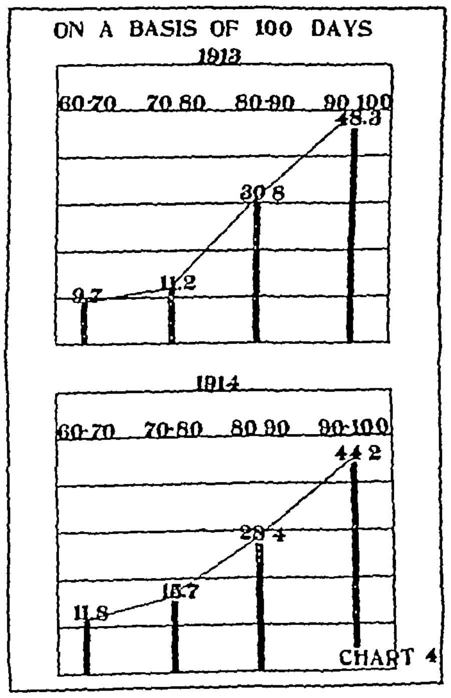

Chart 4 —Diagram showing that the relation of heat to the onset of diarrheas was not due to a coincident number of hot days (Table 4)

In collecting the cases, we were as careful as we could be to satisfy ourselves as to the health of the babies on the days preceding the disturbance of the bowel Only those babies previously well for at least two weeks were recorded, and if the onset of diarrhea had occurred more than two days before being reported by the mother, no record was made of it As to what constituted a diarrheic attack, five or more stools in one day in a baby accustomed to not more than two or three, or four stools, if definitely thin and watery, in a baby who, up to the day noted had had normal or well-formed stools, were, in either case, considered an acute onset Mild or questionable cases were excluded Practically all the babies listed were acutely sick, usually with fever and other symptoms of gastro-intestinal disturbance of the so-called "summer type" All the infants were in the first two years of life, about 80 per cent were in the first year

Summaries of Charts 1 and 2 are found in Tables 1 and 2, and a summary of the two summers in Table 3 By comparing the two summers, a singularly consistent relation between the higher temperatures and the day of onset of the diarrheas is seen Apparently, this becomes evident at 70 to 80, it is much stronger at 80 to 90 and quite marked at 90 to 100

After these charts had been drafted, the question arose as to whether the frequency of the diarrheic onsets was not really the result of a corresponding frequency of hot days The number of days at each respective temperature-group was therefore placed on a common basis of 100 days and, by preserving the ratios originally found, the effect on the incidence of onsets was again determined. Table 4 shows that this was not the case.

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[1] The 1913 work was reported at a meeting of the St Louis Pediatric Society, June 12, 1914, but was reserved for publication until the work of another summer could be added to it.

SUMMARY

The studies reported in this paper in no way furnish evidence pertaining to the manner in which the influence of heat is exerted. They do show, however, in a large series of dispensary infants (222) developing acute attacks of diarrhea, that there was a direct relation between the degree of temperature and the onset of the diarrhea, over half (51.4 per cent.) of the babies becoming ill on days when the temperature was 90, although there were but 31 per cent. of such days in the two summers.

The observations were made among babies of the poor among whom diarrheas in summer are very prone to occur. Most of them were rationally fed, usually on some mixture of certified milk when breast milk was not available. It was especially interesting to find that thirty of them (13 per cent.) were exclusively breast-fed, and that twenty-two more were partially breast-fed, which is evidence that heat may very well influence the baby who is taking clean food. The knowledge gained of home conditions was not thorough enough to be worth tabulating, although home visits were made by nurses in practically every case. The reports of the nurses agreed very well with observations made at the clinic that a great majority of the babies were overburdened with clothing and suffered as do the babies of this class from lack of cleanliness and the usual surroundings of poverty.

706 North Kingshighway.

A CASE OF VARICES OF THE MALE URETHRA

ERNEST G. MARK, M.D., and HARVEY E. McCARTHY, M.D., KANSAS CITY, MO.

We wish to report the following case which is of interest on account of its rarity and case history.

History.—E. M. G., aged 46, married, passenger brakeman. General history of no importance. No history of hemophilia. Twenty years ago he had gonorrhea once, followed a few years later by stricture for which perineal urethrotomy was done. He has had sounds passed at intervals since, followed by no reaction.

Present History.—July 28, 1914, while lifting a train box on a train he felt sudden pain in the region of the urinary bladder, followed by a desire to urinate. He voided urine, but as the act of urination was performed in the dark, he does not know whether any blood was passed. A few minutes later he noticed his clothing in the neighborhood of the genitals was damp, and on investigation found it quite bloody. He urinated five or six times during the night of July 28 without pain, noticed clotted blood at first followed by clear urine and then pure blood. He kept towels around the genitals for dressing and says that four towels were saturated with blood during the night.

Examination.—The patient entered the hospital the following day, at which time we were called in consultation by Dr. John G. Hayden, his attending physician. He was anemic and bleeding was independent of urination. His hemoglobin, as reported by Dr. Hayden, was 70 per cent. He exhibited no tenderness or pain over the renal region, bladder or urethra. The prostate was slightly enlarged but not hard or nodular. Clots presented at the external meatus and despite the administration of 10 c.c. of normal horse serum several hours previously by Dr. Hayden, stripping of the urethra provoked active bleeding.

After cocainization with a 2 per cent. solution containing quite a fair percentage of epinephrin, a cystoscope, 23 French, was introduced with slight difficulty. The use of the cocain solution was by reason of the fact that previous use of instruments had caused him much pain. The reason for the use of epinephrin is obvious.

Cystoscopy revealed no diseased condition in the bladder or posterior urethra. No clots were present and from neither ureter was any blood being passed.

After withdrawal of the cystoscope, the Mark urethroscope was passed with some difficulty to the bulbous urethra. On withdrawal of the tube nothing was found, with the exception of some areas of hard infiltration, until the anterior part of the scrotal urethra was entered.

In the region of the penoscrotal juncture on the roof of the urethra, a peculiar appearance was noted. An irregular, soft mass of a reddish-black color was seen projecting into the canal as a distinct tumor. This color disappeared entirely under air inflation, and irregular striae were noted, becoming yellowish under pressure with the exception of one point near the center, which retained the color of intense congestion. On close observation this was seen to be a small tear or rupture in the mucosa. On alternate distention and release of air, it became clear that the striae were vessels which were emptied of their blood under distention, and which immediately filled up on release of pressure. The point of rupture was unquestionably the source of hemorrhage. The desire to urinate was beyond doubt caused by the filling up of the anterior urethra with clotted blood, with subsequent back pressure.

There can be no question that the mass observed was a venous angioma.

But two cases of varix of the male urethra have, in so far as the search for material extends, been reported—one by Klotz (*New York Med. Jour.*, Jan. 26, 1895) and a case of Young's reported by Fowler (*Johns Hopkins Hosp. Rep.*, xiii, 91, 1906). The reports in full of these cases are given by Lewis and Mark ("Cystoscopy and Urethroscopy," p. 205).

626 Lathrop Building.

Transfusion by the Citrate Method in a Sixty-Hour-Old Baby with Melena Neonatorum.—In view of the interest manifested in the citrate method of transfusion, the following case is worth reporting. A girl baby, weighing 8 pounds, was delivered with low forceps because of an incompletely rotated head. The delivery was made without difficulty and with no apparent injury to the child. During the first fifty hours, the child was irritable and cried. It then passed a small amount of bright blood from the bowels, and three hours later a larger amount of dark blood, at which time it was given a subcutaneous injection of normal horse serum. During the next seven hours eight or ten stools were passed composed exclusively of dark blood. The ears were colorless, lips and finger-nails cyanotic, and the child was having difficulty in breathing. The median basilic vein of the baby was raised through a small incision, and 60 c.c. of citrated blood were injected with a record syringe and needle. The child's color was noticeably improved in both the ears and the lips, respirations were easy, and for the next two hours it slept. During the next few hours two more stools of dark blood were passed, evidently that remaining in the bowel at the time of transfusion. From that time recovery was uneventful. The blood used in transfusing was prepared by placing in a sterile container 10 c.c. of sterile 2 per cent. sodium citrate solution and adding to that 100 c.c. of blood removed from a vein in the father's arm with a syringe and needle. The father's veins were small, and the needle introduced did not allow blood to escape rapidly enough, so a syringe was used to facilitate matters, the blood being immediately mixed with the citrate solution.—H. WOLTMANN, M.D., Mansfield, Ohio.

Morbid Introspection.—The movements of the body machinery do not often rise into the consciousness of the normal man, but are a continuous moving picture show to the neurasthenic.—*Monthly Health Letter.*

New Instruments and Suggestions

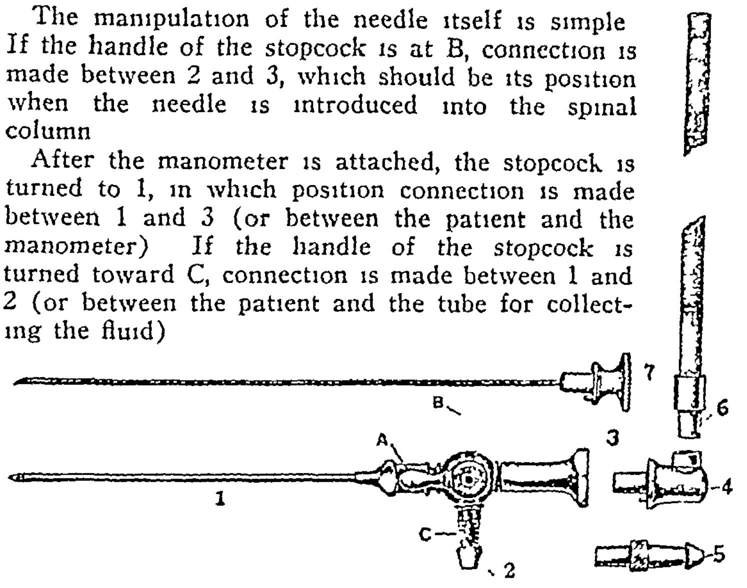
AN IMPROVED LUMBAR PUNCTURE NEEDLE

Julian Mast Wolfsohn, M S , M D , San Francisco
Instructor in Neurology, Leland Stanford Junior University, School of Medicine

Since intraspinal medication is becoming such an important adjunct in the therapeutics of syphilis of the central nervous system, accuracy and ease of administration of the drug used are all important Therefore a modification of the lumbar puncture needle described by me in The Journal, April 19, 1913, p 1204, has been perfected This new needle has many advantages over the old, in that (1) an assistant is not needed to hold the manometer, (2) there is a three-way stopcock which rotates through only 180 degrees, and (3) the administration of intraspinal medication is facilitated The special features of the former needle are to be found in this new needle

The manipulation of the needle itself is simple If the handle of the stopcock is at B, connection is made between 2 and 3, which should be its position when the needle is introduced into the spinal column

After the manometer is attached, the stopcock is turned to 1, in which position connection is made between 1 and 3 (or between the patient and the manometer) If the handle of the stopcock is turned toward C, connection is made between 1 and 2 (or between the patient and the tube for collecting the fluid)



Improved lumbar puncture needle.

For injection the Lüer syringe is inserted directly into 4, or if another container is used, it is connected by rubber tubing to 5, which is inserted into 4, and the fluid allowed to flow by gravity into the subdural space

2502 Fillmore Street

A POLYCHROME STAIN WITH ADVANTAGES OVER THE GIEMSA*

Frank A McJunkin, M D , Boston

Numerous modifications of the Romanowsky stain have been used in microbiology and hematology Of these the Giemsa stain is useful in the staining of smear preparations for spirochetes and protozoa, while the Leishman, and Wright's modification of the Leishman are of greater value for the staining of blood

In the stain described here, the method of ripening the methylene blue used by Novy and the method of obtaining solution of the dyes used by Giemsa are made use of It has the advantage over Novy's method that a single permanent solution is used, and over Giemsa's method that the stain is of greater intensity and much less expensive

THE ROMANOWSKY STAIN

A solution of eosin and methylene blue, made by adding an aqueous solution of eosin to a freshly prepared aqueous solution of methylene blue, stains nuclei blue and cytoplasm red However, when the solution of eosin is added in the right proportion to a slightly alkaline methylene blue solution that has stood for a number of days or that has been heated, the staining is different The nuclei of the cells treated with such solutions are red, while the cytoplasm is blue This color reaction characterizes the Romanowsky solution and all subsequent modifications of it. The structures of smear preparations stained in this way not only show a beautiful color differentiation but they are also heavily stained This color differentiation and the intense staining of structures make the stain of the greatest value in the study of protozoa and other organisms

The staining characteristic of such ripened alkaline methylene blue solutions was noted by Romanowsky in 1891, and since then a very large number of modifications of his method of preparing the staining solution have been described The red staining of the chromatin material by polychrome solutions received several explanations, and by some investigators was ascribed to a single chemical compound to which the term "azur" was applied More recent chemical investigation indicates that more than a single compound formed by the action of dilute alkalies on methylene blue has this property

THE GIEMSA STAIN

Giemsa states that he has prepared in a pure form the substance that stains the chromatin red but the method of preparation, so far as I know, has not been published It may be purchased from Grübler & Co and their agents under the name of Azur 1 The Azur combined with methylene blue and eosin and dissolved in methyl alcohol and glycerin gives a single solution which, when added to water, makes an excellent polychrome stain The Azur 1 and the solutions made from it are expensive, but the simplicity of their application and the good results obtained have led to their extensive use

THE NOVY STAIN

A method of preparing polychrome methylene blue has been devised by Novy and used in the bacteriologic laboratory in the University of Michigan for the past ten years One gm of methylene blue (Grübler's B X), 0.25 gm of sodium carbonate (anhydrous), 50 c c of twice distilled glycerin and 50 c c of distilled water are placed in a 500-c c beaker provided with a mechanical stirrer The temperature is then raised to 88 C by heating with a Bunsen burner and kept between 87 and 89 C for one hour while the solution is constantly stirred at the rate of about 200 revolutions per minute During the heating, distilled water is added in sufficient amounts to make up the loss from evaporation, and the solution finally made up to the original 100 c c

The polychrome methylene blue prepared in this way is placed in a dropping bottle "A," while a 1 per cent solution of methylene blue in 50 per cent glycerin is placed in a second dropping bottle, "B," and a one-half aqueous solution of eosin in a third bottle, "C" At the time of making each stain, about 9 drops of "A," 7 drops of "B" and 7 drops of "C" are added to 15 c c of distilled water The number of drops of each must be ascertained for each new batch of polychrome methylene blue solution Excellent results may be obtained by this method The polychrome methylene blue solution steadily changes on standing, as the methylene blue is in a slightly alkaline aqueous solution

THE POLYCHROME STAIN FOR PROTOZOA DESCRIBED HERE

In this stain the polychrome methylene blue, the methylene blue and the eosin are combined in a single solution by using methyl alcohol and glycerin as solvents In this way there is obtained a single solution which is used like the Giemsa, which stains nuclear material more intensely than the Giemsa solution, and is less expensive and easily prepared (The stain already prepared may be obtained from Bausch & Lomb Optical Company, Rochester, N Y)

In preparing the polychrome methylene blue solution, first measure accurately from a buret into a 500 c c beaker 50 c c of deci-normal sodium carbonate The carbonate solution is titrated against a standard acid using as an indicator a 1 per cent alcoholic solution of methyl red and diluted until there is no factor To the carbonate solution add 1 gm of methylene blue (Grubler's B X) and 50 c c of glycerine

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* From the Pathological Laboratory of the Boston City Hospital

(Merck U. S. P.). The glycerine may be measured in a 100 c.c. graduate. Place the beaker in a water bath and equip with a mechanical stirrer which is run at the rate of about 200 revolutions per minute. A thermometer is placed in the solution in the beaker and the temperature raised to 87 to 89 C. where it is kept for one hour and thirty minutes. The water in the bath outside the beaker should be regulated at 94 to 96 C. At the end of forty-five minutes, add 20 c.c. of distilled water to the stain. At the end of the hour and thirty minutes, remove the beaker from the water bath and pour its contents while warm into a 100 c.c. graduate. Add 5 c.c. of distilled water to the beaker to remove any carbonate that may have precipitated out and pour this into the graduate also. Let the stain stand in this graduate and measure into a second graduate enough methyl alcohol (Merck reagent or Kahlbaum acetone free) to make the total volume 100 c.c. when added to the stain. This methyl alcohol is poured from the second graduate into a 4-ounce bottle and 0.75 gm. of methylene blue (Grübler's B. X.) and 0.25 gm. of eosin (Grubler's yellowish water soluble) added to it. Shake the bottle to secure solution of the methylene blue and the eosin in the alcohol. After the dyes are completely dissolved in the methyl alcohol pour the polychrome methylene blue solution from the graduate into the bottle. The volume of dye in the bottle is now 100 c.c. The weights of the dyes must be accurate and the glassware free from acid.

In using different samples of eosin (Grubler's yellowish, water soluble) a preparation is occasionally met with that is not satisfactory. The stain made with such an eosin stains the red blood corpuscles a blue that cannot be washed out with water. For this reason it is preferable to use an eosin that has previously been found satisfactory in making polychrome staining solutions.

METHODS OF USING THIS STAINING SOLUTION

Application to Smears for the Demonstration of Protozoa and Bacteria.—Smear preparations may be made on either slides or cover-glasses and they may be fixed in a variety of ways, but fixation in equal parts of absolute alcohol and ether for from ten minutes to a number of hours gives perhaps the best results. Distilled water is placed in a staining dish, and to this 1 drop of the stain per cubic centimeter of the water is added. Cover-glass preparations are floated on the solution as soon as the dilution is made, and stained for from thirty to sixty minutes. Trypanosomes, for example are well stained at the end of half an hour, while about one hour is required to stain *Spirochaeta pallida* heavily. The preparation is removed from the stain, and any excess of blue is washed out with distilled water. This may require from one to several minutes in order to bring out the pink color in red blood corpuscles. After washing, the preparation is dried in the air and mounted in acid-free balsam. Slide preparations are best stained by inverting them and allowing the very end of the slide to rest on the end of an oblong Petri dish without cover (a dish the length and width of a slide and about 2 cm. high). The slide is placed in the solution in this way so as to bring the preparation side as near to the surface of the stain as possible. The preparations after staining and washing are dried in the air when they may be examined directly with oil, or they may be mounted in acid-free balsam.

Application to Sections of Tissue for the Demonstration of Protozoa, Bacteria, the Megakaryocytes of Bone Marrow, Etc.—It is more difficult to obtain Romanowsky staining in tissue preparations than in smears. The tissue is cut into pieces not more than 2 mm. thick and placed in 1 part of absolute alcohol and 2 parts of saturated aqueous solution of mercuric chlorid for at least twenty-four hours or it is fixed in 10 per cent. dilution of liquor formaldehydi. If the latter is used as the fixative shrinkage during the imbedding process should be reduced to a minimum. Sections not more than 3.5 microns are cut from paraffin blocks and if mercuric chlorid alcohol was used as a fixative the mercury is removed with iodin. The staining is carried out just as in the case of smears, except that the preparations are allowed to stain over night. After staining, the preparations are washed with distilled water for one minute, and with a cloth or filter paper the excess of water is wiped from the slide or cover-glass about the preparation, which is then dehydrated in xylene containing 5 per cent. of absolute alcohol and 1 per cent. colophonium. The solution in a small dish is renewed several times until by agitation all the visible water is removed from the preparation, which is allowed to remain in the solution from three to six hours until the desired differentiation is obtained, after which it is passed through two changes of xylene and mounted in acid-free balsam. If the nuclei are not the proper red color and there is an excess of blue in the preparation the slide is placed in the sunlight for several hours, as has been recommended by Mallory.

Application to Blood Films. A Polychrome Stain for Blood.—For the routine staining of preparations of blood, the method should be simple and quick and yet bring out all the structures present. For these reasons the stain described above is not applicable to blood films for the usual differential counting of the white cells, inasmuch as the preparation requires separate fixation and prolonged staining. If this stain is at hand however it will be found that an excellent blood stain that is permanent may readily be prepared from it. (The stain already prepared may be obtained from Bausch & Lomb Optical Co., Rochester, N. Y.)

A majority of the samples of commercial polychrome blood stains obtained, do not give the polychrome staining, the nuclei of cells are bluish when films are stained with them in the usual way. Such stains do not bring out the "azur" granules of the endothelial leukocytes. These deficiencies are due in part at least to a failure to adjust properly the reaction of the staining solution. To differentiate the cells that are found in the blood stream, a stain that gives uniform results should be used. The reaction of the polychrome blood stain here described is accurately determined and the staining properties of all samples examined up to the present are constant.

To prepare the Polychrome Stain for Blood, place in an acid free bottle 50 c.c. of the Polychrome Stain for Protozoa and add 250 c.c. of methyl alcohol (Merck Reagent or Kahlbaum acetone free), 0.34 gm. of eosin (Grübler's yellowish, water soluble) and 2 c.c. of half-normal hydrochloric acid (measured accurately from a buret).

To apply the blood stain, the alcoholic solution is placed on the slide or cover-glass in sufficient amount (two drops for a cover-glass and eight drops for a slide) to cover completely the unfixed film for one minute, when twice as much distilled water as stain is added and allowed to act for five minutes. The preparation is washed with distilled water, dried in the air and examined directly with the oil immersion, or it may be mounted in balsam. The red blood corpuscles stain an orange. The leukocytes are well differentiated. The nuclei of all the white cells are red. The cytoplasm of the lymphoblastic cells is a robin's egg blue and free from granules (unless the preparation is overstained), that of the endothelial leukocytes has a trace of blue and a number of reddish-staining granules, while the cytoplasmic part of the neutrophils has no blue and is thickly studded with the neutrophil granules.

Exhausted Orange Peel for Chronic Constipation.—At a recent meeting of the Societe de therapeutique, G. Rosenthal stated that exhausted orange peel had been used with success in the French army for the mechanical treatment of chronic constipation as a substitute for agar-agar. Fresh orange peel is boiled for half an hour in water. The decoction is decanted, and may be used for flavoring mixtures or liquid dentifrices. The marc is then again boiled for thirty minutes in a fresh portion of slightly sweetened water, drained and dried on a plate, when it is ready for use. In addition to the mechanical action of the swelled cellulose giving the necessary consistence to the contents of the alimentary tract, it also stimulates the flow of bile.—*Journal de pharmacie et de chimie*, 1915, xii, 234.

Therapeutics

ANGINA PECTORIS

The chief indications in the management of angina pectoris, aside from the treatment of the attacks themselves, are to remove every possible cause favoring the onset of the attacks and to treat the disease of which angina is frequently found to be only a manifestation Soca for a long time has been convinced that the absorption of toxic products during metabolism is an etiologic factor of importance in the pathogenesis of all functional troubles of the heart and of the aorta This conviction led him to question whether this might not also apply to the attacks of angina pectoris, and to the employment of what he calls the "detoxicating" treatment for their prevention The results of this treatment answered his question in the affirmative and convinced him that intoxication is always present in angina pectoris His position is that this theory is in no way contradictory to the accepted theories of the etiology of the disease, but that it supplements them

During the last ten years Soca[1] has seen 123 anginal patients, eighty of whom have been followed for a sufficient time to warrant therapeutic conclusions At the beginning of the treatment, in a few severe cases, bloodletting or wet cupping was used Amyl nitrite was used in a few cases for the relief of a severe attack, but neither of these procedures comprises a part of the regular treatment Nitroglycerin and the nitrites were not used at all, and no special treatment for hypertension was given except in syphilitics and patients with atheroma In such cases potassium iodid was used

Whenever the underlying disease causing the trouble could be discovered, it was of course treated The other treatment consists of diet, diuretics and rest

For the first day the patient who has a history of angina pectoris attacks is given nothing but water On the second day milk is given in quantities varying from 1½ to 3 quarts Nothing but milk is allowed for from one to three weeks, according to the severity of the case and the response to treatment In the milder cases, at the end of a week, soups made of milk and various kinds of cereals are added and continued for one or two weeks At the end of this time cooked vegetables without salt are added and continued for a month or two Then eggs and a small amount of meat are allowed Milk still remains the basis of the diet, and no salt is added to the food This remains the permanent diet, except that it is discontinued for one week each month, during which time milk alone is taken If attacks recur, the milk diet is resumed at once Some diuretic was always given, such as theobromin salt

Absolute rest was not found to be necessary in any but the severest cases Moderate exercise, including walking, was allowed, but insistence was laid on the avoidance of hasty exertion

At the end of the first week of this treatment, or before that time, pain had invariably been diminished or had stopped Twenty per cent of the cases showed no further amelioration In the others (80 per cent) there was decided amelioration, and in more than half of the cases there was relative or absolute cure, as shown by freedom from attacks even after exertion

It is well known that sudden emotion and overexertion are among the most frequent immediate causes of attacks of angina This is probably due to the fact that they cause a sudden increase of arterial tension Huchard pointed out that any medication which reduced arterial tension usually relieved, to a greater or less extent, the sufferings of patients afflicted with angina While Soca calls the treatment he suggests a "detoxicating" treatment, it is also one which tends permanently to lower the high blood pressure usually present It is rational and quite in line with the best modern treatment of high blood pressure, which attempts to lower this pressure permanently or at least to keep it from increasing by hygienic and dietetic measures, aided by the use of as little vasodilating medication as possible

NEURASTHENIA—SUPRARENAL INSUFFICIENCY

The suggestion that neurasthenia, like hysteria, needed explanation, and that many of the symptoms of this condition could be explained by a subsecretion of the suprarenals was made by Osborne,[1] in several discussions on the subject of internal secretions, and was distinctly described by the same author[2] in an article published in 1910, in which he says, "It is possible that neurasthenic conditions and conditions of chronic low blood pressure, without tangible circulatory excuse, may be due to an undersecretion of the suprarenals " Recently, Tom A Williams[3] has described what he terms the "syndrome of adrenal insufficiency," which is really a form of nervous tire or nervous prostration, or, in more recent years, the fashionable "neurasthenia " Williams thinks that the term neurasthenia is only "a convenient cloak for failure to investigate a case sufficiently " In other words, there must be some tangible cause for the prolonged or persistent condition once called nervous prostration and now neurasthenia

It must, of course, be allowed that physical tire may cause circulatory weakness and prostration, and that mental tire may cause sleeplessness, loss of appetite, and thus a marked insufficiency in the recuperative power of the body without perhaps any special disturbance of any organ or gland On the other hand, persons who are always neurasthenic, always subnormal, without any special disease, should be subject to classification even more readily than is the neurotic individual The typical neurotic generally has, if not always, disturbance of the thyroid gland The typical neurasthenic probably generally has disturbance of the suprarenal gland on the side of insufficiency The blood pressure in these neurasthenic patients is almost always low for the individuals, and their circulation is poor Often the activities of the internal organs are impaired, although there may be no discoverable organic disease Mental exertion, even the simplest, often causes so much weariness and exhaustion as to be prohibitive, that is, such exertion must be forbidden A vasomotor paralysis, often present, allows chillings, flushings, cold or burning hands and feet, drowsiness when the patient is up, wakefulness on lying down and hence insomnia The nutrition may be fair or even good, and the weight may be normal There may be more or less tingling or numbness of the extremities

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[1] Soca, F Note sur le traitement de l'angine de poitrine, Arch d mal du cœur, August, 1915, p 237

[1] Osborne, O T The Therapeutic Application of the Organic Extracts The Journal A. M A, March 23, 1901, p 796, Med News New York, July 12, 1902, ibid, April 4, 1903

[2] Osborne, O T Disturbances of the Internal Secretions Clinically Considered The Journal A M A Feb 26 1910 p 670

[3] Williams, Tom A The Syndrome of Adrenalin Insufficiency, The Journal A M A, Dec 19, 1914, p 2203

There is not much doubt that the cause is disturbance of one or more internal secretions, but just which glands are at fault is difficult to determine Testicular and ovarian disturbance, especially on the side of deficiency, are known to cause general depression, hysteria, hypochondriasis, melancholia and disturbances of the digestive secretions A disturbance of the thyroid secretion may cause in one patient hysteria and in another patient depression, or both conditions may occur in the same patient at different periods That very large mammary glands, in women who are not pregnant and who are not lactating, may disturb the system has not yet been proved Many girls and women, however, who are not well and strong, whose flesh is flabby, who may either be overweight or underweight, and who have the mammary glands excessively large, may be disturbed by an internal secretion of which we as yet know little Pituitary disturbance may affect the cerebral activity The pineal gland seems to have an important secretion Many of the symptoms of physical and mental tire, with low blood pressure, especially if accompanied by increased pigmentation anywhere on the skin, may be due to insufficiency of the suprarenals

Williams comes to the conclusion that many patients who present the well-known symptoms termed "neurasthenia" with low blood pressure, with loss of mental elasticity, with both mental and physical depression with the fear that they cannot now accomplish their usual good mental work, with the story that they have "lost their nerve," in the phraseology of the times, with the fearfulness of making wrong decisions, and with a vascillating and indecisive frame of mind, are many times suffering from an insufficiency of the suprarenals He finds that the administration of the dried suprarenal gland, in tablets of from 2 to 4 grains, two or three times a day, has caused improvement in many cases

Any sensible suggestion is worthy of trial in this troublesome neurasthenia, especially as such patients readily acquire the sanatorium habit and become more depressed Physical and healthy mental exercise is good for these patients Generally an increased protein diet does them good, as many of them have been, for one reason or another, reducing their meat, fish and egg intake

It should be urged that for the supposed suprarenal insufficiency it is not sufficient to give the blood-pressure-raising substance of the suprarenals, but the whole gland must be fed Just how much valuable activity is absorbed from the suprarenal when fed has not been determined Cases are on record in which feeding of this gland has seemed to cure or cause an amelioration of the symptoms of Addison's disease Williams in many instances has found the blood pressure raised by the administration of this glandular substance by the mouth

As the posterior lobe of the pituitary gland has been found to furnish a stimulant to the suprarenals it might be well to consider administering a small dose of this gland in conditions of subsecretion of the suprarenals, especially as this part of the pituitary furnishes a vasopressor substance

As yet we have not sufficiently recognized the fact that all of the internal secreting glands may be subject to the same conditions of hypersecreting and undersecreting which are so well recognized as occurring in the thyroid gland It is quite probable that many unexplained cases of hypertension are due to an increased suprarenal secretion, and it certainly seems more than likely that the condition of chronic hypotension is due to a subsecretion of the suprarenals

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies"

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation but that, so far as known, it complies with the rules adopted by the Council.

W A Puckner, Secretary

SEROBACTERINS (See N N R, 1915, p 329)—The following dosage form has been accepted

H K. Mulford Co, Philadelphia.

Scarlatina Strepto Serobacterin Mulford (Therapeutic)—*(Sensitized Scarlatinal Streptococcic Vaccine)*—Marketed in packages of four syringes containing respectively, 250 million 500 million, 1,000 million and 2 000 million killed sensitized streptococci

QUININE DIHYDROCHLORIDE—Quininae Dihydrochloridum, $C_{20}H_{24}N_2O\text{-}2HCl$—The dihydrochlorid of the alkaloid quinine

Actions Uses and Dosage—The same as those of other salts of quinine Since quinine dihydrochloride is a very soluble salt of quinine, its use has been proposed where concentrated solutions of quinine are wanted, as for subcutaneous injections and similar purposes

Ampules Quinine Dihydrochloride Mulford 0 24 Gm—Each ampule contains 0 24 Gm (3¾ gr) quinine dihydrochloride in 1 Cc of sterile solution Prepared by H K. Mulford Co Philadelphia

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Quinine dihydrochloride occurs as a white powder having a very bitter taste. It should be kept in well closed containers protected from light. It is soluble in about 0 6 parts of water and in about 10 parts of alcohol at 25 C It is almost insoluble in chloroform and ether Its aqueous solution is strongly acid to litmus

Quinine dihydrochloride responds to the usual identity tests for quinine and chloride. It should be practically free from sulphate and from barium.

PURIFIED TRICRESOL, Mulford—A mixture of isomeric cresols, corresponding closely to Cresol U S P

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Purified tricresol Mulford, is soluble in 50 parts of water at 25 C it is free from bases such as pyridine and from hydrocarbons Its phenol coefficient, determined by the U S Hygienic Laboratory method is not less than 2 5 (the exact value is stated on each package) and of a phenol toxicity determined by the method of Hale not greater than 150 per cent (the exact value is stated on each package)

IODOSTICKS (Iodine 60 per cent and Potassium Iodide 40 per cent)—Wooden sticks 1½ inches long, tipped with a mixture of iodine 60 per cent and potassium iodide 40 per cent., packed in amber glass containers Each stick is to be used but once

(Accepted for inclusion with the appendix to New and Nonofficial Remedies)

Prepared by Antiseptic Supply Co New York

IODOAPPLICATORS AND IODOAPPLICATORS, SPECIAL (Iodine 60 per cent and Potassium Iodide 40 per cent)—Wooden sticks 6½ and 12 inches long, respectively, tipped with a mixture of iodine 60 per cent and potassium iodide 40 per cent, packed in amber glass tubes Each stick is to be used but once

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SATURDAY, DECEMBER 18, 1915

FATS IN METABOLISM

Our increasing information in respect to the phenomenon known as the specific dynamic action of the foodstuffs in metabolism has repeatedly been discussed in The Journal If the basal level of metabolism, that is, the transformation of energy in an individual at complete rest and in the absence of food, is carefully determined by the methods of either direct or indirect calorimetry now successfully in use in this country, remarkably constant values are obtained from hour to hour The fundamental resting energy requirement in each case is thus shown to be surprisingly uniform, and when suitable allowances are made for inequalities of size, the basal metabolism per unit of the individual appears likewise to be quite comparable between different persons The scientific basis for estimating the minimal energy requirement of the healthy, normal individual is thus established

Ingestion of food is the occasion for an increase in the metabolism The cause of this "specific dynamic action" of the foodstuffs has been a subject for investigation and theorizing for many years Repeated attempts have been made to explain, on some general underlying basis, the known phenomena of this increased heat production attending the intake of foods Hypotheses postulating the increased work of the digestive glands and the alimentary apparatus, the circulatory and the excretory organs, entailed by food intake, have all been found inadequate to account for the known facts Again, it has been suggested that the products of digestion act as stimulants to the body cells, and thus induce chemical changes with a liberation of heat Attempts have even been made to designate these metabolic stimuli as being definitely of an acid character Thus it was hoped to account for the heightened basal metabolism in certain diseases on the ground of an undue production of acid products as a result of the nutritive disorder

It is becoming more and more apparent that the potent factor in increasing heat production in the ways just cited lies in increasing the metabolites available for cell nutrition Added evidence of this has lately been furnished by Murlin and Lusk[1] of Cornell University Medical College Carbohydrates like glucose, and the amino-acid digestion products of proteins are readily absorbed, and when they are consumed, a rise in heat production follows promptly Fats differ from the other foodstuffs in that the progress of their absorption is somewhat slower The fat content of the blood shows a gradual rise after ingestion of fats, and may not reach its maximum until several hours after the intake of the meal Murlin and Lusk have found that the heat production of the organism shows a similar gradual rise after a meal of fat—an increase which may be regarded as parallel to the progressive influx of fat globules into the blood stream from the thoracic duct They note that the ingestion of fat does not change the quantity of heat produced from protein and glycogen, but that the increased metabolism is at the expense of the fat ingested It is evidently not a single factor or mechanism like the alimentary process which is here concerned If glucose is ingested at the time of the highest fat metabolism, the heat production undergoes a second increase by the same quota which glucose alone would have increased metabolism The respiratory quotient shows that glucose and fat were being oxidized together Furthermore, when glucose and the amino-acid glycocoll, typical of a nitrogenous digestion product, are given together so that their molecules enter the circulation at the time of the height of fat absorption, the increase in metabolism is very nearly equal to the sum of the increases which each of the three materials would have induced alone In the interesting details revealed by their work, Murlin and Lusk see a vindication of the opinion of that master student of nutrition, Carl Voit, that the height of the heat production is determined by the quantity and quality of the materials brought to the cells by the blood

THE MADNESS OF SPORT

A dictionary defines sport as a "particular game or play pursued for diversion, especially an athletic or outdoor game or amusement" It then proceeds to give another definition of the word as "a mockery or object of derision" Any one who contemplates some of the performances in this country which have lately been dignified with the name of sport may wonder in which of the foregoing categories these exhibitions deserve to be classed The public press has spread broadcast the story of a recent automobile contest in which the winner exceeded an average speed of 100 miles per hour for more than three hours The reports of the finish tell that "the driver, overcome by the roar of his machine, was unable to hear for several minutes and acted otherwise like a deranged man"

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[1] Murlin J R and Lusk Graham Animal Calorimetry, Twelfth Paper, The Influence of the Ingestion of Fat, Jour Biol Chem, 1915 xxii, 15

This type of performance also reminds one of the dangerous and thrilling midair stunts in which a few widely advertised aeroplane enthusiasts have engaged, sometimes at the sacrifice of their own lives

Some of this modern sport mania seems to us to deserve the condemnation which we have not hesitated to apply to certain features of the competitive athletics practiced in American institutions of learning or by other groups of young men[1] No one will gainsay the value and pleasure of outdoor exercise graduated to suit the needs of every individual throughout life But the species of overdoing called for in the intense competition of the great contests of our schools and colleges can no longer be defended by platitudes regarding the alleged psychologic value of its competitive features The time has come when statistics regarding latent athletic injuries must be reckoned with and the lives of our youths safeguarded by making a distinction between sane sport and insane participation in the intolerable strain of competitive games of the extreme type The desire to win at any cost must be criticized, not only from the standpoint of unethical practices between opponents, but also with consideration of the insults — sometimes almost intolerable insults — which the strain of training and final competition may place on even normal organs such as the heart Dr Willson of Philadelphia sounded a warning which will be endorsed by many an unbiased observer of what is occurring on our athletic fields, when he said "Trainers should be taught just what the collapse of today means in the future of the athlete Some day the college authorities must of necessity conclude that no form of athletic event is sane that demands of the participants the semiconscious state of heart exhaustion at its conclusion"[2]

Dr Willson presents the issue squarely when he insists that the wisdom or unprofitableness of college and schoolboy competitive athletics must be determined by (1) the ultimate result of public competitive athletics on the physical health and lives of the participants, and (2) the possibility of determining the genuine physical integrity of the proposed participant or his lack of the same, especially with respect to his heart These are criteria which the enthusiasts for the severest types of competitive sports must sooner or later face, unless they will maintain, like some of the advocates of war, that struggle develops some unique human virtues which overbalance any bodily harm

The trainers of athletes are recruited from among individuals who have little or no appreciation of the physiologic principles involved in muscular performance Their aim is comprised in the cry of "win at any cost," and their own prestige hinges on the success of their proteges in competitive or record-breaking contests School and college authorities are singularly indifferent to the question of physiologic fitness and consequences in the case of students who are, in a sense their wards Any one who has given attention to the subject through unbiased channels can readily convince himself that little really useful information is ordinarily available among athletic associations and college groups regarding the physical condition of their members, except so far as it is exemplified in athletic performance They need to be reminded in an emphatic and authoritative way, in the words of Willson, that "no form of athletic event is sane that demands of the participants the semiconscious state of heart exhaustion at its conclusion" Has not the time arrived to call a halt on "insane indulgence" in sport?

And what shall be said of the reckless forms of sport which seem to bewitch by the terrible dangers that they court? Little is gained for the progress of motoring or the science of flying by the daredevil types of performance which are a challenge to fate They seem to have outdone the major sports in which at least any danger involved is not the chief interest to the spectator Let us cease to dignify the recent exhibitions with the designation of sport One editorial writer has expressed it by stating that events which depend for thrill on the nearest possible approach to death by the actors in them represent the degeneracy which overtakes sport and makes madness of it

GARMENT MAKING AND SOME DANGERS TO HEALTH

The solidarity in health matters that exists among all classes is made manifest by the results of an investigation of the garment making trades[1] Attention to this phase of social betterment is more than merely philanthropic or charitable in the ordinary sense of the word, it also has a wide social significance Improvements in the conditions under which such workers labor not only do good for those actually engaged in the occupations investigated, but also are of distinct benefit to the whole community in its definite limitation of the spread of disease

Garment making has passed almost entirely out of the hands of the family and of the numerous small tailoring establishments which used to supply most of the demands in this line, to become the task of large concerns in which numbers of workers are necessarily employed often in very crowded quarters The health of these workers, in addition to its importance as a matter of civic sanitation and the reduction of the municipal mortality and morbidity rates, is of special significance from the fact that large numbers of the community are brought indirectly into contact with these workers through the garments which they have handled rather intimately in the making The suggestion that tuberculosis is undoubtedly the most serious disease prevalent among the garment workers is rather startling In the revolution of the trade, garment making has in recent years passed largely out of the hands of women into those of men, so that the observation that consumption is over three times as frequent among the males as among the females in the trade adds to the significance of this research

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[1] Athletic Sports in Relation to Health, editorial The Journal A M A, March 21 1914, p 936 A Danger Scale for Athletics March 28 1914 p 1024 Athletic Sports Versus Competitive Athletics, April 4 1914 p 1094 The Hygiene of Athletic Sports—Rowing April 11 1914 p 1172 Collegiate Athletic Sports June 20 1914 p 1967 High School Athletics Nov 14 1914 p 1765 A Foreign View of Competitive Athletics March 13 1915 p 910

[2] Willson R N The Heart of the Athlete Its Prospect and Protection abstr The Journal A M A Oct 9 1915 p 1304 Pennsylvania Med. Jour November 1915 p 83

[1] Bull. 71 U S P H S

The serious prevalence of pulmonary consumption in the trade may be gathered from the fact that the affection is nearly ten times as common among male garment workers as among soldiers in the federal army The garment industries favor the prevalence of pulmonary tuberculosis (*a*) by intensifying bad postural habits, (*b*) possibly by reason of the presence of suspended matter, or what is spoken of as woolen "fly" in the trade, in the air of workshops, and (*c*) by reason of the lower state of metabolism induced by the inactivity of a sedentary occupation and insufficient nutrition consequent on low wages For these reasons, garment makers are prone to tuberculosis, and are especially liable to affections of the respiratory tract A much larger proportion of them than is found in the ordinary population suffer from emphysema of the lungs, chronic bronchitis, and chronic catarrhal conditions of the nasopharynx

As most of these affections have at least some infectious element in them, the recommendations of the Public Health Service for the lessening of the dangers to the community from the garment working trades are worthy of wide consideration They suggest that "fly" should be eliminated from the air of the workshops by suction cleaning, and the coating of the floors with some dust-retaining oil Dry sweeping should be rigidly suppressed If good habits are insisted on at the beginning of work at the trade, better postures are assumed, and the danger from lung compression by stooping is avoided The general health would be much better preserved, and resistive vitality distinctly heightened, by the enforcement of regulations against promiscuous spitting, as well as against the use of the common drinking cup and the common towel In recent years there has been a marked improvement in these matters, but much remains yet to be done, and numerous evasions of the regulations have been noticed in the shops The high prevalence of tuberculosis among garment workers, and their direct relation to the public, make the absolute enforcement of such regulations imperative Finally, the care of the mouth and the teeth represents an extremely important element in prophylaxis, and above all in the preservation of health, so that the investigators rightly insist rather emphatically on including these among their recommendations Such matters seemed more of personal than of public interest only a few years ago, but now their relation to public health becomes very clear

Recent years have brought so much amelioration of the working conditions among this class that there seems every reason to think that only a little more interest is needed now to remove most of the abuses that are responsible for the ill health of the workers With the definite knowledge presented by this investigation, it would be quite possible to make this trade at least no more dangerous than a good many others, and to eliminate most of the risks which now exist of respiratory affections being spread beyond the workroom

LESSONS FROM RECENT CHOLERA OUTBREAKS

The statistics and experiences derived from the cholera outbreak in Manila somewhat more than a year ago furnish a number of new considerations for the guidance of those entrusted with the problems of public health[1] Two important features stand out clearly in the light of the successful control of the situation in the Philippines One of these is the demonstration that in effectively combating a cholera invasion, the use of laboratory facilities in the making of bacteriologic diagnosis on a large scale is absolutely essential Without such assistance as is available in the well-equipped Insular Bureau of Science, the results which have been accomplished would have been impossible From November 1 to November 10 alone approximately 20,000 bacteriologic examinations were made, and before the work of inspection was completed, the number of examinations must have exceeded 100,000 The administration of such a service is, by itself, an affair of no small magnitude, and the task assumes an even more formidable aspect when one recalls that social and political difficulties often need to be overcome in order to make possible an inspection of persons who usually present no outward manifestations of ill health Carriers must be detected regardless of the consequences To avoid a danger one must know where it lurks

Lieut-Col Munson, who was the adviser of the Bureau of Health, but who has now returned to this country, has remarked that the work at Manila meant invasion of the accepted rights of the home and of the individual on a scale perhaps unprecedented for any community The collection of the fecal specimens might fairly be regarded as repulsive to modesty Add to this, he continues, the facts that the search was made among persons, to themselves and others apparently healthy, who could scarcely fall even within the class of suspects, and that those found to be carriers were subjected to all the inconveniences of isolation, separation from family loss of earning capacity, etc , and it is apparent with what tact and caution the work had to be carried out and public opinion created in favor of it as an unpleasant but necessary measure

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[1] The information cited in this connection is derived from a paper read by Lieut Col E L Munson of the United States Army at the annual meeting of the Philippine Islands Medical Association, Philippine Jour Sc, Sec B, Trop Med 1915, x 1

The second lesson of the Manila outbreak of 1914 was the importance of the cholera carrier In periods when the mortality is high, the proportion of persons who are carriers without presenting symptoms of the disease will be relatively small, but when the mortality is light, according to Munson the lack of virulence in the germ will probably permit it to be harbored in many cases without the production of symptoms, so that a considerable percentage of carriers may be expected Outbreaks such as that of 1914 in Manila accordingly, occur in which the carriers appear to have been not only the most numerous but also the most insidious and dangerous sources of infection It was undoubtedly spread chiefly by personal contact Public water supplies and articles of food—all of which were formerly charged with a major offense in the transmission of such diseases—were eliminated as channels of infection, and likewise the flies played an insignificant part at most in its spread According to the experts in the field,[1] the lack of use of toilet paper, certain habits in the use of the toilet, infected fingers, and the habit of eating food with the hands from a common dish furnish opportunities for passing the infection from the carrier to another person

A further lesson emphasized by the recent experiences is that the five-day period usually accepted for incubation and quarantine will not suffice in a very considerable number of instances This, as Munson points out, sheds light on cholera situations not otherwise readily explained An observed convict who died of true cholera after an eighteen-day period as a carrier "might have traveled half way around the world scattering his infection broadcast" and died of the disease in a place thousands of miles from any other source of infection There is a warning in such cases, says Munson, that health officers all over the world would do well to heed

An examination of many cholera patients and carriers by Schobl[2] showed that vitality of cholera vibrios in the human body is not inconsiderable In forty-three out of eighty patients, the stools were positive for from two to seven days, in twenty-two, from one to two weeks, in six, from two to three weeks, in one case, for forty-eight days Treatment to free the intestine of the invading micro-organism seems to have been of little value Trained experts are necessary to manage the serious situations that may be created Munson's advice deserves to be emphasized the prompt eradication of a general cholera infection includes the detection and isolation of carriers as a scientific prerequisite

FOODS AND DRUGS IN SMALL PACKAGES

There has lately been considerable agitation over the subject of "package food" The questions involved in the sale of edible products in package form are in many ways similar in principle to those related to the distribution of common drugs and chemical preparations in special containers instead of the usual and older method of sale in bulk There are products like canned goods among foods, or therapeutic serums among medicinal articles, which cannot be distributed satisfactorily in bulk because of inherent difficulties in their preparation and preservation These substances must be kept sterile until used, and hence demand a special container But aside from such obvious necessities, the problem of the relative advantages and disadvantages of package goods perhaps deserves to be carefully weighed in these days of increased cost of living Some features of the arguments involved have recently been summarized by Street[1] of the Connecticut Agricultural Experiment Station It is regarded as a favorable feature that the labeled small sealed package gives some assurance respecting the quality of the goods it contains, inasmuch as the manufacturer is usually eager to establish a reputation for them, and therefore finds it to his advantage to furnish a satisfactory product This is doubtless correct in many cases, so that a particular brand of package goods comes to stand for some special merit In certain instances, however, the real value or usefulness of the product is obscured by the advertising features of the special package Attention is directed thereby to incidental properties of the contents, to some color, flavor or alleged quality which has nothing to do with food value, nutritive superiority or therapeutic merit It is the package rather than the product which becomes the attraction to the purchaser, and almost invariably at a charge which must include extraneous costs not suspected by the purchaser It is not unfair, therefore, to ask whether the same price expended on bulk goods by a discriminating purchaser would not, in many cases, secure better values

It must be admitted that the sealed package usually makes for cleanliness and sanitary conditions, that it sometimes conserves flavors and other sorts of dietetic attractiveness, that it tends to "standardize" prices and protect the ignorant purchaser, and that it offers many conveniences for transportation and storage We must nevertheless learn to count the cost of extraneous elegance and attractiveness And when the needs of institutions rather than persons or families are taken into consideration, the disadvantages of many varieties of "loose" foods need to be seriously debated before the latter are condemned "The consumer of limited income," says Street, "has no more economic right to buy crackers, for instance, in small packages than he has to buy champagne, caviar, pâté de foies gras, or a hundred other similar luxuries " Here is a point of view which suggests the desirability of establishing greater skill in marketing among our people as a whole

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[2] Schobl O Observations Concerning Cholera Carriers Philippine Jour Sc Sec B Trop Med 1915 x 11

[1] Street J P Foods That Are Marketed in Small Packages, Mod. Hosp 1915 v 168

If we object to the purchase of familiar drugs like hexamethylenamin or acetanilid under fancy trade names in expensive form, how shall we defend the comparable practices in the food industries? The question becomes particularly acute in institutional management, where superfluous paper, pasteboard, glass and tin, along with a liberal allowance of printers' ink, can scarcely make good the deficit in real nutriment or medicinal potency Manufacturers of superior brands are beginning to appreciate this, and are meeting the objections by supplying their particular products in larger containers at more economical prices, aiming merely to protect the reputation of their goods by a special label There is a marked distinction between buying a particular brand of, say, boric acid or saccharin, under conditions which identify the maker, and purchasing expensive small packages of the same items with mystical designations

The net weight or volume package laws are intended to give a welcomed and adequate opportunity to every purchaser to ascertain the true content of every package which he pays for It will require considerable education in the reading of labels to make him appreciate that what appears like a half pound of attractively cartoned crackers is in reality only a fraction thereof, or that a large box of breakfast food is liberally filled with an inner container In any event, all the newer requirements for the labeling of foods and drugs in a truthful manner represent steps in the direction of progress The clearer the truth is brought out, the greater will be the advance in the practices concerned

Current Comment

THE EFFECT OF PURIN FOODS ON THE URIC ACID CONTENT OF THE BLOOD

Until quite recently, one of the most helpful indexes of the result of any dietary regimen or therapeutic measure involving metabolism was obtained by an analysis of the urine Thus, the tolerance for carbohydrates was ascertained by examination of the secretion from the kidneys for sugar after the ingestion of varying quantities of this type of foodstuff The relative ability of the kidneys to excrete the usual tissue waste products and inorganic salts was likewise ascertained by urinary analysis, and the efficiency of the renal functions judged on this basis The advent of suitable methods for the analysis of very small quantities of blood—the so-called micro-analysis—has transferred the seat of observation to the circulating fluid in the vascular system Blood analysis for clinical purposes is making rapid strides, not only in the direction of qualitative tests, such as those for evidences of syphilitic and other infections, but also along quantitative lines Several useful "clinical" methods for sugar estimation in blood have been published, and nonprotein nitrogen, urea, creatinin, uric acid, fats and lipoids have been brought within the scope of feasible determination on small samples of blood Enough is already known to demonstrate the value of many of the facts thus ascertained for the clinic of kidney diseases The ingestion of purins, either free as they occur in meats, or in the form of the nucleoproteins of glandular tissues like liver, sweetbread, etc, is followed by a decided increase in the urinary output of uric acid Little has been known regarding the immediate effect of the absorption of purins on the uric acid content of the blood Denis[1] has recently found, from studies at the Massachusetts General Hospital, that in normal individuals no increase in the circulating uric acid is produced by the ingestion of even large quantities of purins It has further been found that the intake of ordinary protein may be increased from an amount sufficient to give from 6 to 8 gm of urea in the twenty-four hour urine to that sufficient to produce a daily urea excretion of from 30 to 50 gm without producing an increase of more than 2 or 3 per cent in the circulating urea As Denis points out, it would thus seem that the normal kidney reacts toward an excess of uric acid in a way essentially similar to that in which it conducts itself toward an excess of urea, and is able to excrete the excess of uric acid presented to it when a diet high in purins is fed, thereby keeping the circulating uric acid at the same level as that obtained when only endogenous uric acid is to be excreted When damage to the kidney has occurred, and even before this has progressed to the point at which nitrogen retention is apparent, as shown by the nonprotein nitrogen values, an accumulation of uric acid takes place in the blood after a short period of purin feeding This is interesting not alone from the evidence that it brings of the importance of the renal efficiency for the level at which uric acid circulates in the blood, but also in its relation to diagnostic procedures Denis suggests that when the determination of uric acid in the blood is undertaken as a diagnostic test, the insistence on a preliminary period during which no purin-containing foods are consumed is unnecessary except in cases in which kidney insufficiency exists, or perhaps in the case of persons who habitually consume extremely large quantities of purin-containing foods

HEMOGLOBINOPHILIC BACTERIA

Although bacteriologists have long been familiar with a rather large group of bacilli which grow artificially only in a medium containing hemoglobin, the peculiarities of these hemoglobinophilic micro-organisms are not so generally known by those who do not specially cultivate this field of study The most conspicuous example of the group is the bacillus definitely recognized by Pfeiffer in 1892 as the etiologic factor in influenza Its discoverer proved the hemoglobinophilic character to be a property of bacteria hitherto unknown The first cultures were made from pus derived from the bronchial secretions of influenza patients It was the failure to secure subcultures on the usual nutrient mediums which directed attention to the part played by the accidentally introduced pus in the successful attempts and led to the observation of the unique role of the blood pigment in connection with these organisms Davis[1] has recently called attention to the further interesting fact that certain of the hemoglobinophilic bacteria identical with or closely related to the influenza bacillus multiply more rapidly when grown on mediums in the presence of other bacteria, such as streptococci or staphylococci Their virulence for animals is also increased This means that they show to a marked degree the property of symbiosis It is a well-known fact that influenzal infection may often aggravate other conditions, and severe mixed infections are not uncommon The influenza bacillus, in particular, does not form spores, and is exceedingly sensitive to all sorts of bactericidal agencies On culture mediums the bacilli die in a short time unless they are transplanted Davis reminds us that the hemoglobinophilic bacteria are interesting in that they are pure parasites, for the very evident reason that only in animals can they find the hemoglobin, which so far as is at present known, is necessary for their existence Inasmuch as they are delicate organisms, their length of life outside of the animal body is very short, not exceeding a few days at most. Davis also recalls that the exact role which hemoglobin plays in the metabolism of these micro-organisms is not known Inasmuch as extremely minute quantities of the blood pigment in mediums suffice for growth it is unlikely that the hemoglobin is necessary because of any purely nutritive properties

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[1] Denis, W The Effect of Ingested Purins on the Uric Acid Content of the *Blood, Jour Biol Chem*, 1915, xxiii, 147

THE PUBLIC LAUNDRY

If our industrial procedures and household practices remained unchanged from one generation to another, it might become far easier than it has been to control disease and stamp out familiar infections No sooner, however, has one factor been controlled by some scheme of sanitation than changing custom has shifted the incidence of the supposedly eradicated danger and raised a new problem of health control Thus, when laundry work was largely confined to the home, the possibility of infection was limited to a smaller group, and the opportunity for exposure to contagion easily appreciated and provided for Today the handling of soiled clothes is being transferred more and more to special plants in which materials from many homes and still more individuals are brought together where employees come into contact with it The possibility of infection under such conditions must vary for specific diseases, and depends on the probable readiness with which the micro-organisms concerned are transferred by soiled linen, and further on the efficiency of the laundry processes as a mode of sterilization It is doubtless true that some of the more important disease germs are transmitted from individual to individual without any intermediate conveying device, nevertheless there are many infections, such as typhoid fever, venereal diseases, etc, which are known to be transmitted through fomites So long as typhoid fever can be charged to the cook who has handled the food, it is not difficult to conceive of a similar transmission through the laundry worker The high temperature, soap, washing soda and other chemicals to which clothes in the laundry are subjected in the washing process are responsible for a sterilizing action Bacteriologic examinations have repeatedly demonstrated that it is effective Dr Dederer,[1] who represents the Committee on Occupational Diseases of the woman's department of the National Civic Federation, frankly states that there is no danger to public health from "mixed washing" of clothing with contaminated articles It is pointed out, however, that while the washing process practically sterilizes the clothes, the reinfection of clean linen is possible when it is sorted and counted in the same room with soiled linen Clean linen, when exposed to infection through contact with soiled linen, may disseminate infection The upshot of this is that soiled linen ought not to be received, sorted or marked in rooms in which clean linen is kept Eating and drinking should be prohibited in rooms in which soiled linen is manipulated, and laundry workers should be instructed concerning the latent hygienic dangers which they may encounter in their work Sanitary measures involving personal hygiene are essential for their own welfare as well as that of the public served The problems involved have never received any serious attention from public authorities in this country, but the rapid growth of the laundry business is certain to awaken interest in them, as it has been aroused in the case of public restaurants, bakeries, food shops and other institutions which are assuming household functions

THE NECESSITY FOR MORE INTENSIVE STUDY OF PRISONERS

Society itself is made a partner in crime by some of the methods aimed at the prevention of crime That our present undiscriminating system of dealing with offenders against the law too often makes criminals is no news to those who have given it study, but reform is as yet sporadic and tentative Two recent articles emphasize the need of study and classification of prisoners from the point of view of mentality and social adjustment An abstract of one of these, an account of an examination by Drs Ordahl and Singer of convicts at Joliet, appears elsewhere in this issue[2] The other, Dr E R. Spaulding's elaborate study of 500 inmates of the Massachusetts Reformatory for Women,[3] was reviewed in the Current Medical Literature Department, October 23 In both of these, as in other similar studies, the large proportion of mental defectives found among the prisoners is striking Evidently it is unjust to these subnormal persons to punish them as if they were normal and responsible, and just as evidently it is a risk to society to release them at the end of their terms of imprisonment as if they were normal and responsible Spaulding rightly urges the necessity of adequate provision by the state for permanent custodial care of all committable mental defectives, whether or not they have court records

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[1] Davis D J Hemoglobinophilic Bacteria Science, 1915 xlii 532

[1] Dederer Ebba A. Danger to Laundry Workers of Infection from the Handling of Soiled Linen Am. Jour Pub Health 1915 v 875

[2] An Examination of Prisoners at Joliet Penitentiary Miscellany, The Journal A. M A. this issue p 2189

[3] Spaulding E. R. Our Criminal Problem from the Standpoint of Classification and Segregation Boston Med. and Surg Jour 1915 clxxiii No 15 abstr The Journal A. M A Oct. 23 1915 p 1487

Spaulding's article and that of Ordahl and Singer both emphasize the need of separating the more hopeful and educable class of prisoners from the class of confirmed and incorrigible criminals Both articles also lay stress on the value—indeed, the necessity—of the indeterminate sentence Although this phase of the matter is not discussed in either article, the data in both likewise suggest the reason for the undeserved odium, which has in some instances been thrown on the workings of the indeterminate sentence and other excellent measures The trouble with methods requiring discrimination and wisdom in their application is that they presuppose the possession of exact knowledge with regard to the prisoner, and this exact knowledge too often is not available, for the prisoner has not been sufficiently studied Ordahl and Singer emphasize the "scanty and very unsatisfactory" character of the information on the subject of convicts available for the use of the board of pardons Thus the dangerous criminal may be released to the detriment of society, and the pliable but not as yet dangerous accidental offender may be retained to his own detriment Knowledge is needed, and with increased knowledge the more advanced methods will become feasible

THE QUESTION OF BACILLEMIA IN TUBERCULOSIS

The pathologic condition now familiarly known as bacteremia, in which the micro-organisms of disease are not merely local in their distribution but are generalized by being carried about in the blood stream, is in any event a grave one The capacity of bacteria to invade the circulation seems to be more common than was formerly believed to be the case Thus the organisms of typhoid fever are now known to circulate freely in the blood during the first two weeks of the disease and often longer than this Lobar pneumonia may be accompanied during its acute stages by a pneumococcus septicemia Organisms like the streptococci and the anthrax bacilli give rise preeminently to the septicemic forms of infection If they multiply rapidly in the blood, the situation immediately becomes serious
of vary ther cases micro-organisms obtain temporary
relative into the blood current and either find lodg-
tissue waste some tissue, as on the valves of the heart,
wise ascertained by some immunizing agency and dis-
of the renal fe circulation An accurate knowledge
advent of suital deportment of each variety of micro-
small quantities oly affords an important basis for
—has transferred phylactic procedures The evidence
lating fluid in the value of tubercle bacilli in the blood
clinical purposes is ns is exceedingly conflicting[1] No
the direction of qualita
dences of syphilitic and one will deny that the micro-organisms occasionally enter the blood The distribution of tuberculous lesions is of itself suggestive on this point This, however, does not settle the question as to what extent and in what respect acute miliary tuberculosis is a generalized infection Kessel[2] has lately made new attempts to grow tubercle bacilli directly from the blood, and to demonstrate their presence by direct microscopic examination and particularly by careful direct inoculation of susceptible animals with the blood from patients with advanced pulmonary tuberculosis — all with negative results Kessel admits that this outcome in the forty-seven cases examined by him does not prove conclusively that tubercle bacilli are never present in the circulation, but they strongly suggest that a bacillemia such as is present in other infectious diseases is at least uncommon in pulmonary tuberculosis even in advanced stages of the disease It may be that from time to time tubercle bacilli are washed into the circulation from a pulmonary focus, but it is shown by experimental evidence from the effect of direct intravenous inoculation that in such an event they rapidly disappear from the blood

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education, public health, etc)

ILLINOIS

Smallpox at Alma—It was reported from Alma, December 3, that thirty-two cases of smallpox have been diagnosed in the town

Batavia in Quarantine—The town of Batavia is practically quarantined because of a diphtheria epidemic All churches and schools have been closed and all persons less than 19 years of age have been ordered to remain in their own homes whether they have the disease or not

Medical Library Moved—The medical department of LaSalle City Library has recently been moved to the Hygiene Institute, LaSalle, and is now known as the LaSalle-Peru Medical Library The library has at present 703 bound volumes and about 100 unbound periodicals

Quarantine Lifted—All of Cook County with the exception of the Union Stock Yards and two infected areas in Lyons was ordered released from foot and mouth disease quarantine, December 10 In Lake County, Shields Township alone remains restricted, in McDowell County many townships remain free areas and all of Du Page County is declared free with the exception of the territory in Downers Grove Township within 3 miles radius of infected areas in Lyons township, Cook County

Northern Central Physicians Elect—At the forty-second annual meeting of the Northern Central Illinois Medical Association held in Peoria, December 8, Dr James A Marshall, Pontiac, was elected president, Dr Frederick W Wilcox, Minonk, first vice president, Dr David S Conley, *Streator, second vice president*, and Dr George A Dicus, Streator, was reelected secretary-treasurer Two of the oldest medical men in the state, Drs William O Ensign, Rutland, and James Tweddale, Washburn, were present at the meeting

Personal—Dr Victor A Bles, a member of the staff of the Elgin State Hospital, is seriously ill as the result of a pulmonary hemorrhage Dr Bles has received notice of his appointment as clinical assistant in the department of neurology and psychiatry in the University of Illinois——Dr Frederick W Werner has been elected chairman of the

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Bacilli in the Blood, Jour Infect Dis,

[2] Kessel, L Concerning the Presence of Tubercle Bacilli in the Blood of Tuberculous Patients, Am Jour Med Sc, 1915, cl, 377

active medical staff of the Silver Cross Hospital, Joliet Dr Grant Houston has been elected vice chairman of the staff and Dr Roy B Leach, secretary ——Dr Harry H Whitten has been appointed local surgeon for the Aurora, Elgin and Chicago Railroad at Batavia ——Elgin physicians held a banquet in honor of Dr Harriett B Ward December 3 ——Dr Henry L Metcalf, Mount Carroll, who has been critically ill with septicemia in the Freeport General Hospital is reported to be improving ——Dr Orie F Schulhan has been elected secretary of the Woodruff Memorial Sanatorium, Quincy ——Mrs Bertha Logan, Chicago, has been elected superintendent of the Rockford Municipal Sanatorium

Chicago

Leaves Large Estate —The estate of Dr Laura J R Wolcott, who died December 8, is appraised at $195,000

Fresh Air Cars Taken Off —The city council transportation committee, December 8 disapproved of the innovation ot the so-called fresh air cars and no more of these cars will be operated, at least during the winter

Red Cross Campaign —The American Red Cross has inaugurated a campaign to secure 10 000 members in Chicago At present the membership in the American Red Cross is 20 000 while the Japanese Red Cross has a membership of 2,000,000 and the German Red Cross of 1,000 000

Personal.—Dr Gottlieb A Lurie, who has been on dutv with the Rockefeller Commission in Serbia fighting typhus fever has returned home ——Dr Rollin T Woodyatt of the Sprague Laboratory for Medical Research lectured December 8 in the amphitheater of the Cincinnati General Hospital on "Newer Aspects of Diabetes"

Health Commissioner Seeks to Extend Medical Inspection System.—Health Commissioner Robertson has asked for $250 000 to enable him to extend the health inspection service in the public schools He believes that a physician and nurse should be on duty in each public school

Heart Disease.—Figures compiled by the Chicago health department for the period from 1897 to 1914 show, in an interesting way, the actual and average percentage increase in deaths from heart disease in each ten and twenty year period from 20 to 80 years Between 1897 and 1914 the deaths from heart disease for persons under 20 years increased 1 per cent., from 20 to 30, 5 per cent , from 30 to 40, 18.8 per cent , from 40 to 50, 30 9 per cent , from 50 to 60, 40 4 per cent , from 60 to 80 58.3 per cent , over 80, 97 4 per cent., the averages of these percentages for all age periods being 49 4 per cent

Charges Against Haiselden —During the last three weeks, the newspapers have given considerable publicity to Dr Harry J Haiselden because of his action in the care of an infant born with anomalies of development Formal charges were preferred against the physician before the Chicago Medical Society through which he holds Fellowship in the American Medical Association The ethical relations committee before which the case came has submitted a report to the council of the society in which according to newspaper report the physician was found guilty of the charges and his expulsion from the society recommended The committee is said to have based its recommendation "Not on the fact that the Bollinger baby was allowed to die when the operation would have saved it, but because Dr Haiselden permitted to be published over his name in a daily newspaper a serial story of the Bollinger baby's case, and because the same case, and his connection with it, have been exploited in moving picture shows" This report was received by the council and will come up for action in due course

INDIANA

Free Dispensary for Evansville —The mayor of Evansville, after conference with the committee representing the Vanderburg County Medical Society, stated that he would recommend the establishment of a free city dispensary in his next annual message

Fort Wayne Physicians Elect.—At the annual meeting of the Fort Wayne Medical Society December 7, Dr Garrette Van Sweringen was elected president, Dr Adam L Schneider, vice president, Dr Miles F Porter, Jr, secretary, and Dr Elmer E Morgan, treasurer

Rabies —According to the report from the laboratory of the State Board of Health, for the year ended Sept 30 1915, there were 239 cases of rabies in the state, two of which were fatal There have been 916 cases treated since treatment by the state was established In 1912, 237 cases were treated

Personal —Dr William W Blair Princeton, is reported to be critically ill ——Dr Edgar W Rine, Winchester, is reported to be critically ill with heart disease at his home ——Dr T Roy Cook, Bloomfield, is seriously ill with rheumatism and nephritis in the Linton Hospital ——Dr Budd Van Sweringen, Fort Wayne, has been appointed chief surgeon of the Pennsylvania Lines west of Pittsburgh, to succeed the late Dr Christian B Stemen, Fort Wayne ——Dr and Mrs Emanuel P Masgana, Linton, have returned to France, where Dr Masgana will be connected with the French Red Cross

KANSAS

Foot and Mouth Disease —It is reported that a man at Ellsworth has contracted foot and mouth disease The diagnosis, it is said, has been confirmed by the secretary of the State Board of Health

Morris County Physicians Organize —The Morris County Medical Society was organized at Council Grove, November 22 Dr William A McCullough, Delavan, was elected president, Dr W H H Smith, Alta Vista, vice president, and Dr Albert Beam, Wilsey, secretary-treasurer

New Building for University —The dispensary and laboratory building for the University of Kansas at Rosedale was opened, November 22 The building is 46 by 86, with fireproof construction, two stories and basement in height and contains drug rooms, laboratories, examining rooms and general clinic rooms

Personal —Dr Walter S Sutton Kansas City, has returned from service with the American Ambulance in Paris ——Dr Charles E Ross has been reappointed and Dr Lloyd P Warren appointed a member of the City Medical Advisory Board of Wichita ——Dr Philip B Matz, Leavenworth, has succeeded Dr James T Faulkner, Lansing, as physician at the Kansas State Prison

Schools Closed by Disease —The public schools of Troy have been closed as a precautionary measure against scarlet fever and church services have been suspended for two weeks ——The county superintendent of Sedgwick County has ordered two schools in Districts No 8 and 12 to be closed on account of diphtheria, and a third school has been temporarily suspended because of smallpox among its pupils ——The schools of Little River have been closed and all public gatherings have been interdicted on account of the presence of scarlet fever and diphtheria ——Two of the schools of Pratt have been closed for a week on account of the presence of diphtheria

LOUISIANA

Decision Under Fraudulent Advertising Act.—Dr Oscar Dowling, New Orleans, executive officer of the Louisiana State Board of Health, writes that on December 11 an important decision in favor of the board was rendered by Judge Ott under the Louisiana Fraudulent Advertising Act Two weeks before, the board had preferred charges against C J Allen and W M Chapman, who were advertising "Herbs of Life," manufactured by the Herbs of Life Medicine Company, Springfield, Ill , and F D Haaze, who was exploiting the merits of "Shaker Tonic," "Shaker Oil" and "Shaker Balm Soap" manufactured by the Life Tone Medical Association of Memphis, Tenn The first two pleaded guilty and were fined $100 and costs, the fine being remitted on their agreement to leave the state for good The third defendant was tried December 11 He was found guilty and fined $325 He says the case will be appealed to the supreme court on the ground of unconstitutionality of the law

MARYLAND

School Closed by Diphtheria.—The Williamsburg School has been closed for the second time this term on account of the appearance of several new cases of diphtheria

Tuberculosis Week.—The past week was devoted to a warfare on tuberculosis in Baltimore to impress on the people of the city the importance of taking an active part in the campaign against the disease. Each day was set aside for some particular educational demonstration showing the ravages made by the disease. The program was confined to three days

Chinese Physicians' Visit.—Two women physicians from China arrived in Baltimore recently and visited the Johns Hopkins Hospital, where they will study the work done by the institution and the lines on which it is managed They are Dr Adela E Sheffer and Dr Wynao S Wango of Shanghai, China, who came to this country with seven other physicians to make a study of the hospitals in America

Medical Survey—The first medical survey to be started in Maryland was inaugurated in Frederick County, November 29, with an inspection of the Johnsville School The survey is being made by Surgs Talliaferro, George L Collins and Ed H Mullan of the United States Public Health Service, and Drs Richard B Norment and Joseph Brown of the State Board of Health

Gift to the Johns Hopkins—A valuable collection of periodicals, monographs, and other medical books, consisting of more than 4,000 volumes, was presented to the Johns Hopkins Hospital by Dr Howard A Kelly, Baltimore The collection can be said to be the life study of Dr Kelly for most of the books deal with his own special work in gynecology and obstetrics and are valued at about $25,000 It is planned in the near future to have a suitable building erected for the library

Personal—Dr William H Welch, professor of pathology of the Johns Hopkins Medical School, who has been in China during the summer with Dr Simon Flexner of the Rockefeller Institute, devising a way to introduce modern medical methods in the empire, will sail December 18 from Yokohama, Japan, for this country On the return of Dr Welch to Baltimore, the General Education Board will hold a meeting to discuss the addition of a new department to the Johns Hopkins Medical School and Hospital——Dr Marshall B West, health officer of Catonsville, who was operated on several weeks ago at the Maryland University Hospital for appendicitis, has returned to his home and is improving rapidly——Dr Charles F Nolen, Baltimore, who was recently operated on at the Union Protestant Infirmary, has recovered and resumed practice

NEVADA

Correction—Dr Martin A Robison advises under date of December 7 that the item in The Journal of December 4, stating that he and Dr Henry Bergstein had resigned from the Reno Board of Health is not authentic, that both these gentlemen are serving on the board and have been serving since their appointment

NEW YORK

Half a Million More Needed—The creation of a division for the prevention of tuberculosis in connection with the State Health Department, the expense of laboratory work and the payment of the full salary of $3,000 a year to sanitary engineers are the three principal reasons for the increase in the appropriation in health work sought by State Commissioner of Health Biggs

New Officers—At the annual meeting of the Queens-Nassau Medical Society held in Long Island City, November 30, Dr Edward H Pershing, Woodmere, was elected president, Dr John J Kindred, Long Island City, vice president, and Dr James S Cooley, Mineola, was reelected secretary-treasurer of the society for the twenty-seventh consecutive term

New York Physicians to be Prosecuted—The New York *Sun* of December 10 announces in a telegram from Albany that prosecution of 300 physicians for violation of the vital statistics law has been ordered by the State Department of Health The offense in every case was the violation of the section requiring the registration of births within five days Dr Cressy L Wilbur, director of the division of vital statistics, states that physicians will be given an opportunity to explain the delay, but that only substantial reasons will be allowed as excuse for violation of the law

Sanatorium Notes—A proposition for the construction of a tuberculosis hospital, to take the place of the institution recently burned at Elmira, has been taken up with the Elmira Tuberculosis Hospital Sanatorium Commission The plan is to make a bond issue of $2,000 in every budget when the 1915 budget has been adopted and to continue this same amount in the budget each year until the $12,000 deemed necessary for the erection of the hospital has been paid——A special committee has been appointed by the board of supervisors to serve for a month in an advisory capacity regarding the Steuben County Tuberculosis Hospital for which an appropriation of $30,000 was authorized at the recent election

New York City

Neurologists Elect—At the annual meeting of the Brooklyn Neurological Society, Dr Siegfried Block was elected president, Dr Charles P Frischbier, vice president, and Dr John F W Meagher, secretary-treasurer, and Dr James F Morrison, librarian

Measles Among Belgian Refugees—Three hundred Belgian refugees were landed here on December 8 and taken to Ellis Island for examination Forty of the children were found suffering from measles and with their mothers were detained at the hospital on Ellis Island All but 110 of the number have been held for further observation

Personal—Dr George A Wyeth was the delegate of the Bronx Board of Trade to the Rivers and Harbors Convention held in Washington, D C, December 8——Dr Joseph J O'Connell, health officer of the port of New York, Brooklyn, is reported to be seriously ill with heart disease at his official home, Quarantine Station, Staten Island

Course of Instruction for Food Inspectors—A course of lectures, conferences and demonstrations dealing with the various aspects of pure food work has been arranged by Mr Lucius P Brown, director of the health department's bureau of foods and drugs The lectures are in the nature of a postgraduate course and are planned so as to perfect inspectors in the details of the various branches of their work

Tuberculosis in New York—A statemen issued by the department of health in connection with the work of tuberculosis week places the number of persons afflicted with tuberculosis in this city at 50,000 Of the 37,000 known to the board of health only 3,200 are registered under the care of private physicians and 6,000 under the care of city institutions It is estimated that 15,000 are treated at clinics

Intern Examination—A joint examining board will hold a competitive examination of candidates for internship in the New York, Roosevelt, St Luke's and Knickerbocker hospitals on a day not yet selected Application blanks and full information may be obtained from Dr Charles L Gibson, chairman of the Joint Hospital Examining Board, care New York Hospital, 8 West Sixteenth Street, New York City Applications properly filled out must be in the hands of the committee on or before December 31

Woman's Hospital Opens New Wing—The Thompson Pathological Building which forms the west wing of the Woman's Hospital was formally opened on December 9 as a feature of the sixtieth anniversary of the hospital This structure was erected at a cost of $150,000 and is the gift of Mrs Frederick F Thompson An address was delivered by Dr Henry Clarke Coe and Dr Wilfred T Grenfell of Labrador was one of the speakers During the past year 2,500 patients have been treated in the hospital and 3,728 operations have been performed

College of Physicians and Surgeons Formally Named—The name "College of Physicians and Surgeons of Columbia University" has been adopted officially and the school formally declared to be the medical department of the university It has been considered such for years but this formality has never been gone through At this same meeting of the trustees the committee on conference was authorized to continue negotiations with the Presbyterian Hospital and to cooperate with other hospitals and institutions with the ultimate purpose of establishing a great medical center on the lines already planned

Medical Society Topics—Dr Arthur B Duel delivered an address before the New York Academy of Medicine, December 16, on "Orientation and Equilibration, A Study in the Sense of Position and Movement, Its Dependence on the Vestibular Apparatus and Its Importance in the Whole Field of Medicine"——The fourth lecture of the Harvey Society series given at the Academy of Medicine, December 18, by Prof Florence W Sabin of Johns Hopkins University, is on the subject "The Method of Growth of the Lymphatic System"——The first meeting of the New York Geriatric Society, which was organized in June last, was held December 15, at which the subject for discussion was "The Neglect of the Aged"

Surgical and Medical Clinics in New York City—The Society for the Advancement of Clinical Study announces a continuation of its bureau of information relative to surgical and medical clinics to be held in New York City A bulletin board is maintained for this purpose at the Academy of Medicine, 17 West Forty-Third Street, in charge of a competent attendant who is on duty from 9 to 12 a m and from 2 to 6 p m The clinics are posted on a special circular of information which is mailed to outsiders at a cost of 50 cents per week The bulletin board contains the daily clinics as well as those stated at various hours at different hospitals Facilities are thus afforded to visiting physicians to observe special operators or clinicians

Another Building for Mount Sinai Hospital—Plans have been prepared for a new building for the mount Sinai group This is to be known as the Guggenheim Memorial, and the entire expense of its construction will be defrayed by the six Guggenheim brothers The estimated cost of the new building is $500,000 It will follow the design of the general construction of the main building fronting on Fifth Avenue and will be a complete hospital in itself It will also have a separate staff of doctors In addition to this gift Mount Sinai Hospital has received $50,000 from Murry Guggenheim and $5 000 from each of his brothers to carry on the work of completing and equipping the five other buildings now in the course of construction

Queensborough Hospital for Contagious Diseases—Hitherto cases of contagious diseases occurring in the Borough of Queens and requiring hospital care have been taken to Kingston Avenue Hospital in the Borough of Brooklyn, but it is now announced that the new Queensborough Hospital will be complete and ready to receive patients on Jan 1, 1916 The hospital is located on a farm between Jamaica and Bayside It is of mission type, three stories high and thoroughly equipped for the purposes for which it is to serve The wards are divided into cubicles so that there will not be more than two beds in each cubicle, thus insuring almost perfect isolation The hospital contains 20,879 square feet of floor space and 243 800 cubic feet of room and is so designed that a large number of cases can be cared for at a small expense

"Patent Medicine" Interests Would Defend Themselves—A report of the recent meeting of the New York Pharmaceutical Conference as published in the *N A R D Journal* mentions an offer from an unnamed source of legal and financial aid for druggists of this city who are prosecuted by the health department authorities for alleged violations of this ordinance ' The proposal for accepting this aid was placed before the representatives of the conference by Dr William C Anderson, the chairman of that body, who refused to make public the name or names of those from whom the offer came The Pharmaceutical Society as a whole passed resolutions which have been quite widely published, signifying their intention of upholding and cooperating with the regulations of the department of health with reference to patent medicines"

Whooping Cough Clinic—The November *Bulletin of the New York City Department of Health* gives a full report of the first year's work of the whooping cough clinic which it has been conducting The total number of cases treated at this clinic during its first year was 1,397 It was intended at first to treat only patients in the clinic district but it became necessary to let down the barriers in face of the numbers clamoring for treatment The method of treatment followed consists in giving three to four subcutaneous injections of vaccines, one every other day, after which for a period of three or four days a mixture of antipyrin and codliver oil is used for a period of three or four days The whooping cough usually disappears after the third or fourth injection Those familiar with the work of this clinic find that it fills a long felt want irrespective of the therapeutics employed, and that at least two more such clinics should be established, one in the Bronx and one in East New York

Use of Diphtheria Antitoxin.—For many years the department of health has been furnishing diphtheria antitoxin free of charge to the public and a corps of physicians was maintained to inject the antitoxin on request Two years ago the administration by the department's physicians was discontinued but additional facilities were provided for the prompt and ready use of this remedy by private physicians The statistics of the health department show that there was more antitoxin sold in 1914 than in 1913, but that there was a very material reduction in the amount distributed free in 1914, with a very appreciable increase in the number of cases of diphtheria reported This falling off in the use of free antitoxin was chiefly confined to Manhattan and Brooklyn with an increase in the number of cases of diphtheria in both boroughs, and in a measure accounts for the increased incidence The department of health calls attention to the great significance of these facts and emphasizes the importance of the universal use of antitoxin in diphtheria

NORTH CAROLINA

Communicable Diseases—An epidemic of scarlet fever in Marion has rendered it necessary to close the public schools, to suspend the Sunday schools and to warn children to stay off the streets and avoid public gatherings

State School Celebrates Anniversary—On November 4, the seventieth anniversary exercises of the State School for the Blind, Raleigh, were celebrated Governor Craig presided, and addresses were made by Superintendent John F Bledsoe of the Maryland School for the Blind, and others

Memorial to Living Physician—The people of Currituck County have raised a fund in honor of Dr William T Griggs of Poplar Branch Of this fund, $150 has been used to purchase an operating table in the Elizabeth City Hospital, and the remainder has been given to the charity fund of the institution

Hospital Notes—The Hendersonville Hospital Association recently elected Dr William R Kirk chief of staff and Drs William B W Howe, Jr, James S Brown, Guy E Dixon, Benjamin F Cliff Andrew B Drafts, James F Cranford and Eugene P Mallett as associates Dr James F Cranford was elected dean of the training school

City to be Sued—The State Board of Health has authorized that action be instituted in the courts to compel the city of Louisburg to install a sewage purification plant, as ordered by the State Board of Health some time ago At present the sewage of Louisburg is discharged into a stream which later supplies other towns in the state with water, and these towns have been compelled to install purification plants to care for their town and to care for other towns still farther down the river

Personal.—Dr Harry Q Alexander, Matthews, Mecklenburg County, was recently elected president of the North Carolina State Farmers' Union for the ninth successive term, and Dr James M Templeton, Cary, was elected vice president ——Dr William W Stancell, assistant physician to the State Hospital for the Insane, Raleigh, is taking postgraduate work in New York, and will move to Montana next year—— Dr and Mrs James L Egerton, Hendersonville, have returned after a six weeks' trip to the Pacific Coast——Dr John H Mease Canton, who has been under treatment in a hospital in Baltimore, has returned and resumed practice—— Dr Hubert B Haywood, Jr, Raleigh, has been elected physician to the New York State Agricultural and Mechanical College, as the result of a competitive examination

Medical Society News—The entire membership of the Buncombe County Medical Society was entertained at dinner by Dr Eugene B Glenn, the president, at his home in Asheville, December 6——The Lincoln and Catawba medical societies held a joint session at Lincolnton, December 6, and were entertained at dinner by the physicians of Lincolnton ——The Pasquetank-Camden-Dare County Medical Society held its annual meeting and election in Elizabeth City, December 1, and elected the following officers president, Dr Wm A Hoggard, Woodville, vice president, Dr John B Griggs, Elizabeth City, and secretary-treasurer, Dr William A .Peters, Elizabeth City——The New Hanover County Medical Society has enlarged its scope and now allows public health workers, dentists and pharmacists to become associate members

PENNSYLVANIA

Personal.—Dr Harry B Rushton has been appointed meat and milk inspector of Reading——Dr Nelson E Newbury, Scranton, was assaulted by the half-crazed son of a patient, and severely beaten

Medical Club Election.—At the annual meeting of the Oil City Medical Club, December 2, Dr Harry H Lamb was elected president, Dr Irwin H Boyd, vice president, and Dr Sylvester W Sellow, secretary-treasurer

Improvement to Hospital—Grand View Hospital, Sellersville, plans enlargements, at its present location, between Sellersville, Menlo Park and Perkasie. Messrs C N and B F Cressmann of Philadelphia are to be its almoners

State Exhibit to Panama—Governor Brumbaugh has authorized the loan of the State Department of Health social hygiene exhibit at the Panama-Pacific Exposition to the United States government for exhibition at the Panama National Exposition

Guests of Honor—Dr Barton K. Thomas Philadelphia, was the guest of honor at a dinner given to the physicians of Pottstown by Dr T Edmund Mills, December 1——Dr William L Rodman, President of the American Medical

Association, was the guest of honor at a dinner given by Dr John B McAllister at the Harrisburg Club, December 3, and afterward delivered an address at the twentieth anniversary meeting of the Harrisburg Academy of Medicine

Schools Closed on Account of Disease—The borough schools of Robisonia have been closed on account of the presence of diphtheria——The public schools and Sunday schools at Orwigsburg have been closed and children under 16 have been prohibited from attending public gatherings, moving picture shows, etc, on account of a measles epidemic At present seventy-three cases have been reported——Jessup and Marshwood have ordered all schools closed and have prohibited all religious and public meetings for the time being on account of the prevalence of smallpox

Typhoid Infection Traced—State Health Board officials, directed by Dr Samuel Dixon, have been cooperating with the authorities of Abington Township in an effort to trace a number of cases of typhoid fever which have broken out in Abington and Moreland townships, north of Philadelphia According to Dr Dixon there are twenty-two cases and at the time of the first outbreak of typhoid some time ago, it was determined that the cases were distributed along routes served with milk from one dairy Tests were made, not only of milk, but of the water supply, and of oysters, celery, and other raw vegetables The department found everything blameless excepting the milk Improvements have been made at the dairy in question, and a repetition of the outbreak is not at all probable

Philadelphia

Health Bulletins—Big posters, in red ink, to teach mothers how to buy food that will keep their children in good health, will be distributed in a few days by the Child Federation The poster is the fifth bulletin issued by the federation

Rescue Drug Addicts—Drs Horatio C Wood, Jr, and John W Ryan, members of a commission of physicians and business men of Philadelphia, recently formed for the purpose of aiding the habitual users of drugs, sent eleven drug addicts to hospitals, December 3 The expenses for the treatment are paid from a fund raised by the committee from contributions by business and professional men of the city

Inspection of House of Correction—The consulting board recently named by Director of Public Safety Dripps for the aid of persons in the house of correction is composed of Drs James W Anders, Ella B Everett, J Leslie David, Charles H Frazier, Elijah H Siter, Thomas H Fenton, T H Weisenburg, Horace Philips and Frank Crozier Knowles The committee began its work December 15, with a thorough inspection of the Holmesburg institution

Testimonial Dinners—The members of the Samaritan Hospital Medical Society gave a testimonial dinner, December 16, to Dr George Morton Illman at the Mercantile Club, December 16——Prof Jacques Loeb delivered an address on "Adaptation" at the meeting of the Philadelphia County Medical Society, December 8, followed by a reception and supper The meeting was arranged by the committee of the medical society on cooperating allied agencies and institutions

Fatality Record—Despite safety-first campaigns to reduce motor-car accidents, statistics compiled by the coroner show that the year drawing to a close will reach the high-water mark in deaths of this kind Seventy-one persons have met death to date in motor accidents, an increase of fourteen over 1914 However, deaths from trolley accidents have shown a marked decrease, forty-three persons having been killed so far, against fifty-seven last year This number is the smallest since 1906 Railroad deaths total to date about seventy-one, against the same number in 1914

Personal.—Dr Malcolm Grow has been appointed chief surgeon to the twenty-first flying column of the Russian Red Cross——Dr Charles B Penrose has been appointed a member of the Fairmount Park Commission——Dr Wilmer Krusen is said to have been selected by the mayor-elect as director of health and charities——Dr C F Mitchell sailed for France, December 4, where he will serve on the staff of the American Ambulance Hospital——Dr Daniel J McCarthy, member of the University of Pennsylvania *unit* at the American Ambulance Hospital, Paris, has returned from abroad

Tuberculosis Week—The observance of "Tuberculosis Week," which began December 6, was given a flying start in this city A campaign of publicity to arouse this country for a fight against this deadly disease was the object of the crusade At the local headquarters of the National Association for the Study and Prevention of Tuberculosis, 1701 Chestnut Street, hundreds of pamphlets showing the effect of tuberculosis on the human body were distributed Statistics showing the relative growth of the disease in the various states were also displayed This year's program includes a "medical examination day," which took place December 8, when the need for a physical examination for every one was urged

Charities Bureau—Having installed all machinery necessary for undertaking relief work among charitable institutions of the city, the Charities Bureau of the Chamber of Commerce have turned the first wheel in their campaign to supplant indiscriminate giving with scientific methods, the purpose of which is to give 90 cents out of every dollar directly to the cause or persons involved The bureau planned to begin a thorough investigation of all hospitals and institutions doing charitable work The list will cover virtually every hospital in the city In spite of the fact that a number of them are supported through state aid, almost without exception, it was said at the Chamber of Commerce they receive private help, too The examination by the Charities Bureau will take in the organization of these institutions, the administrative methods, the officers and directors Finances will be scrutinized to find out whether the best results are being gained This work will be done through personal visits and the findings placed before the committee, who will pass on the standard of work done and the degree of efficiency shown Members of the Chamber of Commerce will be posted as to what the hospitals are doing in charitable work and a complete list of worthy institutions will be made in order to prevent solicitors of unworthy causes gaining a hearing

WISCONSIN

Mix in Oshkosh—Dr Charles L Mix, Chicago, was the guest of honor and delivered the address at a banquet and joint meeting of the Winnebago County Medical Society and Oshkosh Medical Club, November 24

More Sterilizations Planned—Operations on fifteen additional patients under the sterilization law will be made before Christmas holidays According to a statement of the officials of the State Board of Control, the first ten operations are said to have been entirely successful

Communicable Diseases—On November 29 it was reported that there were twenty-five cases of smallpox at Plymouth ——An epidemic of diphtheria has been reported to be in Block Brook, and on the advice of the deputy state health officer, District School No 4 has been closed Seventeen of the pupils of this school were either ill or there was diphtheria in their families——Antigo reports the presence of thirty-seven cases of smallpox

Sanatorium Notes—A petition has been presented to the Waukesha County Board setting forth the need of a tuberculosis sanatorium and asking for an appropriation for its erection and maintenance——The city council of Milwaukee has voted to rebuild the Blue Mound Sanatorium for the treatment of incipient tuberculosis, Wauwatosa The new institution will accommodate not less than 150 patients Health Commissioner Ruhland also recommends enlarged dispensary service for early diagnosis of the disease——Grant County has voted against the establishment of a tuberculosis sanatorium by a vote of thirty to twenty-three

State Sanatorium Controversy—Dr Norman F Hoffman, superintendent of the State Sanatorium, Wales, whose resignation has been demanded, appeared before the Wisconsin Board of Control at Madison, November 30, and stated that the charges of incompetency against him were unfounded A committee of six Milwaukee physicians who made an investigation of the institution, November 26, reports no dissatisfaction of the management on the part of the patients or employees, that the records of the sanatorium show very favorable results so far as the treatment of patients is concerned, and that the expenses of conducting the institution have been reduced

Rules Against Physician—The attorney general on November 27 advised the district attorney at Antigo that a physician who attends a dependent sick person cannot lawfully charge the town, village or city in which the sick person resides for such service without the consent of the municipality The case in point was that of two physicians who attended a sick woman in Langlade County They performed an operation to save her life and the patient's condition was so urgent that the physicians did not have time to consult the town authorities The town refused to pay the bill and the physicians threatened to bring suit to collect, but the attorney general rules that under the circumstances the plaintiffs have no lawful claim against the town or county

Hospital News—The new hospital building of the Milwaukee Infants' Home and Hospital is nearing completion The building is fireproof, two stories and basement in height and will accommodate about fifty patients This will more than double the capacity of the institution——A hospital has been opened in Bloomer, which will be open to all local physicians——A new Lutheran Hospital is to be erected at Plymouth to cost $40,000 Of this amount, subscriptions of $10,000 have already been received——The county board of Waukesha County has recommended the erection and maintenance of an isolation hospital on the county farm grounds north of Waukesha——Steps have been taken for the formation of a corporation to build a Lutheran Hospital in Superior

Personal.—Dr Moses J White, who has been superintendent of the Milwaukee County Hospital for the Insane, Wauwatosa, for twenty-two years, has been succeeded by Dr Albert F Young, Milwaukee——Dr Frank J Schultz, Milwaukee, has been reelected superintendent of the Milwaukee County Hospital——Dr William F Beutler has been reelected superintendent of the Milwaukee County Asylum for the Chronic Insane, Wauwatosa——Dr John T Corr, Racine, has been elected physician for the blind in the eastern district of Racine County, and Dr William A Fulton, Burlington, to fill a similar position in the western district——Dr Arthur J Patek, Milwaukee, was operated on for appendicitis in Mt. Sinai Hospital Milwaukee November 12, and is doing well——Dr Clyde W Morter, Milwaukee, is suffering from septicemia and is under treatment in Mt. Sinai Hospital

CANADA

Laval's Offer Accepted—A cable has been received from the war office by the Canadian minister of militia accepting the offer of a hospital from Laval University, Montreal It will be established in England as a general military hospital

Queen's University to Get Legacy—The executors of the estate of the late Lord Strathcona have notified Queen's University, Kingston, that the $100,000 left to that university is now available and ready to be paid over to the beneficiaries

Personal.—Dr John M Adams, formerly of Seattle, has arrived at Shornecliffe Kent, to take up his duties wtih the Canadian Army Medical Corps attached to the Forty-Third Winnipeg Regiment, of which Sir William Osler's brother is lieutenant-colonel, and Ralph Conner, the author, is chaplain——Col George G Nasmith, R.A.M.C., Toronto, who has been in charge of the Canadian Field Expedition since the outbreak of the war, has returned for a short rest and then, it is said, will recruit a large medical contingent to return with him to the war zone

Outdoor Expansion at the Toronto General Hospital.—The board of governors of the Toronto General Hospital, acting on the advice of the superintendent, Dr Charles K Clarke, are establishing two new free clinics The first will be for the treatment of contact cases of tuberculosis this may be opened nightly The second will be for social diseases The third will be for occupational diseases, as now that much ammunition is being made in Toronto, there have been increased cases of lead poisoning and other occupational diseases It is expected the establishment of the first two will deal a blow to quack doctors and worthless medicines

Toronto University Hospital Kept Moving—It is understood that the University of Toronto Base Hospital is now located in Macedonia, although some fear is entertained for the rather dangerous position of this hospital Several cables from Toronto to the officer commanding recently have remained unanswered, and the latest word is from a letter from Dr William J O Malloch Writing from Saloniki, Dr Malloch states that it is no wonder residents of Macedonia once called for the apostle St Paul They really needed the whole twelve For a time the unit was divided, some going with some 500 wounded to Malta, but it is understood that the unit has again been reunited

GENERAL

Correction.—In Table 1, p 2142, this issue, the minus-plus sign should be a minus, and in all the tables in the article the minus sign indicates "no trypanosomes"

Porto Rico Physicians Meet.—The annual meeting of the Medical Association of Porto Rico was held in the Young Men's Christian Association rooms, San Juan, P R., December 11 and 12, under the presidency of Dr Pedro Gutierrez Igarravidez

Biologists to Meet.—The Federation of American Societies for Experimental Biology, formed by the Physiological Society, The Society of Biological Chemists, The Pharmacological Society and The Society for Experimental Pathology, will hold its annual sessions in Boston at the Harvard Medical School, December 27 to 29, inclusive

Salvarsan to be Generally Available at Usual Price—We understand that the French and British governments have acceded to the request of the United States government and will allow a six months' supply of salvarsan and neosalvarsan, covering the requirements of the United States, to be shipped from Rotterdam The British consul general at that port has been instructed to issue permits on application for such quantities Farbwerke-Hoechst Co, the American agents, announce that as soon as shipments arrive they will be released to physicians and hospitals as heretofore, and that there will be no increase in price. It is also announced that the patentees are arranging to manufacture the products in this country, but it will take some months before a successful product can be turned out here

Pan-American Scientific Congress—The second Pan-American Scientific Congress will be held in Washington, D C, Dec 27, 1915, to Jan 8, 1916 The congress interests educators, scientists and publicists and its work will be done in nine sections, namely, anthropology, astronomy, meteorology and seismology, conservation of natural resources, agriculture, irrigation and forestry, education, engineering, international law, public law and jurisprudence, mining and metallurgy, economic geology and applied chemistry, public health and medical science, and transportation, commerce, finance and taxation There will also be forty-five subsections The section on public health and medical science will be presided over by Maj Gen William C. Gorgas, Surgeon-General, U S Army The organization headquarters will be the Pan-American Union and the headquarters during the congress will be the New Willard Hotel

Arsenobenzol (Salvarsan) Made in This Country—From a communication received from Dr Jay F Schamberg, director of the Department of Dermatological Research, we abstract the following

The dermatological laboratories of the Philadelphia Polyclinic have been engaged for over three years in certain scientific investigations related to dermatology Over $50,000 have been expended during this time, the financial support coming from a generous citizen of Philadelphia It is not known, however, how long this support will continue. During the past year and a half the laboratory has devoted a considerable part of its activities to chemotherapeutic studies The toxicity of various preparations of mercury have been investigated and efforts made to produce a mercurial compound of greater efficacy than those already in use. A number of new organic mercurial preparations were made in the laboratory and tested out on animals infected with experimental trypanosomiasis This work not being immediately fruitful, the problem was temporarily laid aside and work was begun on arsenical compounds Incidental to this work, salvarsan was reproduced and a number of allied arsenobenzol products made and tested out. In view of the shortage of salvarsan resulting from the war, it was decided to make and distribute salvarsan under its chemical name of arsenobenzol [The name arsenobenzol, by right of priority, belongs to the compound $C_6H_5.As$ As C_6H_5. While this term is also used as a synonym for salvarsan, arsenphenolamin hydrochlorid is more descriptive and a more scientific designation for the drug The latter is the name adopted by the Council on Pharmacy and Chemistry, and is in New and Nonofficial Remedies It would seem that arsenobenzol is too firmly established in chemical literature to be ignored and, further, it is not a correct description of the compound known as salvarsan—Ed] The director of the laboratories had a conference with the New York representative of the Farbwerke Hoechst and informed him that in the interests of humanity and the public health, the laboratories had determined to supply arsenobenzol to physicians and hospitals having urgent need for the same During the course of this conversation is was a feeling of both parties to the interview that no court of equity would issue an injunction against the manufacture and distribution of a drug that was saving life and conserving the public health at a time when such drug could not be supplied by the patentees It is stated that the arsenobenzol made by the dermatological laboratories has now been employed on hundreds of cases with excellent therapeutic results, and with no report of any accidents or untoward complications The drug is slightly less soluble than the German product and the solution requires to be filtered It is prepared otherwise in the same manner as salvarsan and must be neutralized by the addition of sodium hydroxid solution The toxicity tests on animals and the therapeutic tests in rats infected with experimental trypanosomiasis give substantially the same results as those obtained from the Ehrlich product The dermatological research laboratories will distribute the drug at the antebellum figure of $3 00 per tube for ampoules containing 0 6 gm and $2 50 per tube for ampoules containing 0 4 gm In order that the drug may be supplied to as many hospital patients as possible, it has been decided to distribute the arsenobenzol to hospitals at the rate of $2 00 for the 0 6 ampoule and $1 50 for the 0 4 ampoule, with the understanding that such drug is to be used only on ward and dispensary patients It was the desire of those connected with the laboratory further to reduce the price of the drug to hospitals, but legal advice to the effect that such reduction might ultimately injure the market of the patentees, has for the present restrained such action The pledge is given that any profits that may accrue from the sale of this drug shall be exclusively devoted to the establishment of a fund for further scientific research and no part thereof shall inure to the benefit of any individual The chemical work is carried out under the supervision of Dr G W Raiziss and the pathologic work under Dr John A Kolmer

WAR NOTES

Appreciation of Red Cross—A letter has been received at American Red Cross headquarters from Count Talleyrand-Perigord who is assigned by the German Red Cross to look after the welfare of the Americans and cooperate with them in their relief work among the wounded at Gleiwitz and Kosel, in which he pays eloquent tribute to the skill and efficiency, devotion and self sacrifice of the personnel of the American Red Cross units——The empress of Russia has conveyed to the American Red Cross Society sincere expressions of her gratitude for the gifts to the Russian Red Cross and the assistance the American Red Cross Society has given the sick and wounded——Queen Eleanore of Bulgaria has cabled to the American Red Cross expressing her heartfelt gratitude for the succor furnished to the Bulgarian sick and wounded by the Red Cross

Aid for Belgian Physicians—The report of the treasurer of the committee of American physicians for the aid of the Belgian profession, for the week ended December 11, lists the following contributions

Buffalo Medical and Surgical League, Buffalo, N Y		$ 5 00
Washington County Medical Society, Calais, Me		25 00
Receipts for the week ending December 11		$ 30 00
Previously reported receipts		7,873 84
Total receipts		$7,903 84
Previously reported disbursements		
1,625 standard boxes of food at $2 20	$3 575 00	
1,274 standard boxes of food at 2 30	2,930 20	
353 standard boxes of food at 2 28	804 84	
Total disbursements		7,310 04
Balance		$ 593 80

F F Simpson M D, Treasurer,
5 Jenkins Arcade Bldg, Pittsburgh, Pa.

FOREIGN

Hospital Opened in Colon—The Samaritan Hospital, a private institution with twenty-five beds, has been opened in the city of Colon, Panama It is owned and operated under the direction of Drs S J Taylor and Harry Eno It is the first private hospital in the republic of Panama since the American occupation of the Canal Zone

Foot and Mouth Disease—In 1911 and 1912 Ireland had an epidemic of foot and mouth disease, and again in 1914 in a more severe form The disease appeared in England in the fall of 1913, and in January, 1914, the first case was reported in Ireland By June the loss from the disease had been estimated at $9,000,000 It was thought the disease might have been brought to Ireland by drovers from the lairages in England It was also suspected that the disease might have been brought in by straw packing from the continent

PARIS LETTER

Paris, Nov 25, 1915

The War

SCIENTIFIC INVENTIONS BEARING ON THE NATIONAL DEFENSE

The minister of public instruction in the new cabinet is a scientist, M Painleve, who is well known as a mathematician Believing that the problems of national defense call for the aid of all the intellectual forces of the country, M Painleve has just created in the department of public instruction, for the duration of the war, a division of investigations bearing on the national defense This division has the task of examining inventions and also of undertaking scientific researches which are called for by the war and navy departments

NERVOUS SYMPTOMS IN WOUNDED PATIENTS

The Societe de neurologie de Paris recently held two extraordinary sessions, under the presidency of Prof Gilbert Ballet, to study the methods of clinical examination and the course to be pursued in cases in which exaggeration or simulation of certain nervous symptoms is suspected in wounded patients The medical service had convoked the heads of all the military neurologic centers to take part in these sessions Such a meeting had been much desired by French neurologists who for a year had to treat wounded patients with nervous symptoms The opportunity to exchange scientific and practical opinions on the subject created much interest At the end of the session, the society passed the following resolutions, which were transmitted to the medical service

1 In each of the armies, neurologic and psychiatric centers, such as already exist in several of them, should be formed In such centers all patients affected with nervous and mental conditions and all those suspected of simulation or exaggeration should be examined The purpose should be, on the one hand, to recognize, before they are removed to the special centers of the interior, the patients affected with lasting organic lesions, and on the other hand to avoid the removal to the rear of patients suspected of simulation and exaggeration or affected with nonorganic conditions, which can be recognized, treated and cured very rapidly in the zones of the armies, as appears from results already obtained in existing centers (The Journal, Dec 11, 1915, p 2102)

2 Soldiers suspected of simulation or exaggeration or of voluntarily prolonging their nervous troubles should be sent to special services where they can be under competent medical oversight and severe military discipline at the same time Experience has shown the value of such measures in certain neurologic centers where they have been applied It would be desirable that such special services be attached to the military neurologic centers already existing, if the heads of these centers are able to operate them

3 The opinions of the physicians of the neurologic centers with regard to a soldier dismissed by them should be taken into account wherever the soldier may go

4 Under no circumstances, at present, should soldiers affected with psychoneuroses be sent for discharge to the committees that arrange discharges

5 In view of the great number of diagnostic errors in cases of wounded men with nervous symptoms, it would be desirable that in each region, or group of regions, neurologic experts should regularly visit all hospitals and other places where patients are under treatment These experts should make notes on each neurologic case for the information of the committees that arrange discharges and to enable the attending physicians to form an opinion of the propriety of sending the soldiers back to service or to one of the neurologic centers

6 In view of the delicate scientific and practical problems which daily present themselves with regard to soldiers in neurologic hospitals, it would be desirable that the heads of the neurologic centers should have the opportunity to meet from time to time in order to coordinate their efforts to render the course of action uniform

M Justin Godart, undersecretary of the military medical service, informed the Societe de neurologie de Paris that he was forwarding to the director-general of the medical service of the armies, with his approval, the resolutions passed by the society Experience has shown, he said, the justification for forming neurologic psychiatric centers in each of the armies So far as the second resolution is concerned, it would be simple to form, instead of special services, departments annexed to the neurologic centers operating under competent medical direction and with a more severe discipline Resolutions 3, 4 and 5 have his unqualified approval

As for Resolution 6 M Godart is ready to approve the meetings requested provided they are not too frequent

CASES OF DEAFNESS AND MUTISM FROM WAR ACCIDENTS

It is well known that the powerful explosives employed in the present war sometimes produce complete deafness and mutism unaccompanied by any apparent lesion When the patient does not recover from his mutism spontaneously in a few weeks, the case is almost always incurable Dr Marage has just made a report to the Academie des sciences on this subject He has devised a system of mechanical vibratory massage of the larynx and the sides of the neck Thus the external and internal muscles of the larynx are acted on At the end of a few days, the patients begin to talk, and at the end of three weeks they entirely recover their usual speech This applies to those who have been deaf and mute for four or five months, and in whom all other methods of treatment have failed

Dr Andre Castex recently read before the Academie de medecine a paper on the various kinds of deafness produced by the explosion of large projectiles Such cases are ordinarily due to the explosion of a shell which plows up the earth, throws a man several yards up into the air or buries him under a mass of earth Sometimes the noise of near battle is sufficient to make a combatant deaf These cases of war deafness, according to seventy-seven observations of Castex, may be divided into two principal classes (1) rupture of the tympanum and (2) rupture of the labyrinth 1 Rupture of the tympanum is produced especially when the projectile, ball or shrapnel strikes the temporal or mastoidean region or when a shell produces a slight concussion 2 Rupture of the labyrinth is observed when a shell of large caliber which shakes the whole trench sends a man into the air It often coincides with cerebral disturbance Prognosis is very grave for the hearing It has been necessary to discharge the greater number of soldiers affected with rupture of the labyrinth Auditive reeducation by the natural voice and, still more exercises in lip reading are the best means of compensating for this infirmity

THE WAR AND STUDENTS AT THE FACULTÉ DE BEYROUTH

M Barthe a deputy, reported to the minister of public instruction that many foreign students had been compelled by the closing of the Faculte de medecine de Beyrouth to discontinue their studies there The climate of Montpellier being the most similar to that of Beyrouth, M Barthe asked if the students from Beyrouth could not continue their courses at the Faculte de medecine de Montpellier The minister of public instruction replied that the students from Beyrouth might, with the consent of the department of foreign affairs carry on their studies either at Montpellier or any other university of their selection

RESUMPTION OF EXCHANGE OF SERIOUSLY WOUNDED PRISONERS

The next exchange of seriously wounded French and German prisoners will take place December 2 A train of wounded German prisoners will come from Lyons and one or two trains of wounded French prisoners from Constance The number of patients to be sent back to their country is not large because in the recent fighting the greater number of seriously wounded men were gathered in and cared for by their own armies and have not been made prisoners

ACUTE NEPHRITIS OBSERVED IN THE TROOPS IN THE FIELD

At the same session of the Academie de medecine de Paris, Drs J Parisot and Ameuille of Paris called attention to the fact that observations on the troops in the field have shown an altogether abnormal number of cases of apparently spontaneous acute nephritis, which might be called cryptogenetic, for their origin is very obscure These cases of nephritis have nothing in common with what has been called albuminuria of fatigue They are true nephritis accompanied sometimes by anasarca sometimes by serious uremic manifestations, too often terminated by death Because of their frequency, their seriousness and their rapid course and also because of deceptive symptoms which they often manifest at the outset they deserve much attention, it is important that they should be treated early Their seriousness, in fact, seems to increase in proportion as treatment is late From these facts one practical conclusion appears In spite of the difficulties in the way, physicians called on to give the first care to patients from the ranks should consider examination for albuminuria as important as for fever

PHARMACISTS IN THE ARMIES

M Derognat, a deputy has called the attention of the minister of war to the fact that pharmacists in the army, having no military grade, are subject to all the demands made on a mere orderly, such as sweeping and scrubbing rooms M Derognat asked if it would not be possible to give the pharmacists, even those of the second class, the rank of pharmacist *aide-major* or at least auxiliary pharmacist with the grade of adjutant while keeping them in the group of male nurses with whom they are already classed The minister replied that 304 pharmacists *aides-majors* of the second class (ranking as second lieutenants) have been appointed since May 7, 1915 Auxiliary pharmacists will be selected from the pharmacists of the first and second class as well as pharmaceutical students of three or even, under certain conditions, two years' school work, but these appointments will be made only as need for them arises

Use of Condensed Radium Emanation in Glass Tubes

Dr Debierre professor of anatomy at the Faculte de medecine de Lille, and Dr Regaud agrege professor of anatomy at the Faculte de medecine de Lyon, made a report to the Academie des sciences on the possibility of utilizing therapeutically in place of radium, radium emanation collected and condensed in glass receptacles chilled by immersion in liquid air Glass tubes containing radium emanation and sealed with a blow pipe constitute the most simple, economical, surest and most varied apparatus for biologic applications The only inconvenience of the employment of concentrated emanation is due to the fact that it produces a certain loss of radio-active energy from the incessant destruction of the emanation in the mother radium solution On the other hand the procedure presents the following advantages the assured security of the radium, which thus ceases to circulate among users, the variety of shapes for the apparatus in which it can be applied, finally the possibility of any physician being able to procure the active agent without acquiring the mother substance

Death of Professor J Ville

The death of Dr Jules Ville, professor of medical chemistry at the Faculte de Montpellier, is announced

Marriages

THOMAS HENRY BATES, M D, Madison, Fla, to Miss Mamie Fairfax Dunstan of Houston, Texas, in New Orleans, November 25

OLIVER AMES LOTHROP, M D, Boston, to Miss Edna M Sturk of Aylesford, N S, at Cambridge, Mass, November 24

PERCY EDWIN DUNLOP MALCOLM, M D, to Miss Janne Wolff both of New York City, at Montclair, N J., November 13

NELSON LEE ROY HELLER, M D, Dunkirk, Ind., to Miss Pauline Jeanette Current of Red Key, Ind, Octobe 22

LOUIS VAN PATTEN, M D., St Charles, Ill, to Mrs Caroline Gillette of Aurora, Ill., at Elgin, Ill, November 25

JOHN EDSON BOLENDER, M.D, Cadillac, Mich., to Miss Maud Kepple of Grand Rapids, Mich, November 25

JOSEF BENSEN SCHROCK, M D, to Miss Lois Estelle Duffie, both of Scottsbluff, Neb, at Omaha, December 2

GUY OTEY SHIREY M.D, Fort Worth, Texas, to Miss Louise Ball of New Boston, Texas, November 3

HARRY MOLLYNEAUX BROWN, M D, to Miss Reba Hildebrant, both of New Vienna, Ohio, November 30

ANTONIO B JANNARELLI, M D., to Mrs Sophia Johrous Monteleone, both of New Orleans, October 26

FREDERICK SMITH BAIRD, M D to Miss Mary Jane Lawrence, both of Bay City, Mich., November 27

WARFIELD THEOBALD LONGCOPE, M D., to Miss Janet Percy Dana, both of New York City, December 2

MARY MERRITT CRAWFORD M D, Brooklyn, to Mr Edward Schuster of New York City November 30

WILLIAM H TREIBLE, M D to Miss Camilla J Steig, both of York, Pa., in New York City, recently

ARRIE BAMBERGER, M D, to Miss Amelia Miriam Hitzelberger, both of Chicago, November 25

CHARLES E WHITEHEAD, M D, to Miss Eleanor M Flynn, both of Logan Mont, December 1

RALPH MONTGOMERY GOSS M D., to Miss Calenda King, both of Athens, Ga, November 24

GEORGE DAVID WOLF, M D., to Miss Rose Bonime, both of New York City, November 25

CLARENCE LEWIS WALTON, M D., to Miss Clara Marek, both of Chicago, December 2

Deaths

Ap Morgan Vance, M D University of Louisville, Ky, 1878, aged 61, a Fellow of the American Medical Association and president-elect of the Kentucky State Medical Association, president of the Jefferson County Medical Society, died at his home in Louisville, December 9 Dr Vance was born in Nashville, Tenn, May 24, 1854, received his preliminary education in New Albany, Ind, and was a student in medicine of Dr David W Yandell, one of the most distinguished surgeons of Louisville In addition to the society affiliations noted above, Dr Vance was a member of the American Orthopedic Association, American Gynecological Society and Southern Surgical and Gynecological Association He had served at various times as surgeon for the City Hospital, and Sts Mary and Elizabeth Hospital and had been chief surgeon of the Masonic Widows' and Orphans' Home for thirty-five years He was the only medical member of the special commission which built the new million-dollar Louisville City Hospital and was responsible for the general plans and scope of the building Professionally Dr Vance ranked as a pioneer in orthopedic surgery, and personally he was greatly esteemed and beloved

Abram Alexander Smith, M D Bellevue Hospital Medical College, 1871, aged 68, a Fellow of the American Medical Association, a member of the New York Academy of Medicine and American Climatological Association, attending physician to Demilt Dispensary from 1873 to 1879, a member of the staff of the New York Women's Hospital from 1875 to 1879, successively lecturer on clinical medicine, lecturer on materia medica and therapeutics and professor of materia medica and therapeutics in his alma mater from 1875 to 1892, professor of principles and practice of medicine and clinical medicine in the University and Bellevue Hospital Medical College since 1898, for many years consulting physician to Columbus Hospital, the Hospital for Ruptured and Crippled and Minturn Hospital, died at his home in New York City, December 13, from heart disease

William John Roe, M D Jefferson Medical College, 1895, aged 46, a Fellow of the American Medical Association, also a dentist, professor of surgical pathology and oral surgery in the Pennsylvania College of Dental Surgery, Philadelphia, first assistant demonstrator of anatomy and surgery in his alma mater, a member of the medical staff of the Philadelphia General Hospital, died in St Mary's Hospital, Rochester, Minn, November 27, from tuberculosis of the kidney

John R Rathmell, M D Starling Medical College, Columbus, Ohio, 1883, aged 63, professor of principles and practice of medicine and diseases of children, secretary and later dean of the faculty of the Chattanooga Medical College, a member of the staff of Erlanger Hospital, Chattanooga, formerly president of the Chattanooga Medical Society, the Chattanooga Board of Health and the Tennessee State Board of Health, died at his home in Chattanooga, December 2

Forrest Bedford Smith, M D University of Pennsylvania, Philadelphia, 1900, aged 47, a Fellow of the American Medical Association, local surgeon to the Southern Pacific System at Houston, Texas, and consulting surgeon to the Houston Infirmary, died in the Sunset Hospital, Houston, December 1, from acute gastritis for the relief of which operations had been performed without success

Ezra B Hiestand, M D Starling Medical College, Columbus, Ohio, 1863, Bellevue Hospital Medical College, 1872, aged 85, the oldest practitioner of Hardin County, Ohio, and a charter member of the Hardin County Medical Society, in honor of whose eightieth birthday anniversary a celebration was held in 1910, died at his home in Kenton, Ohio, November 28, from heart disease.

William Richter Longshore, M D Pennsylvania Medical College, Philadelphia, 1860, aged 77, a member of the Medical Society of the State of Pennsylvania, a veteran of the Civil War in which he served as surgeon of the Ninth Pennsylvania Volunteer Infantry, for many years surgeon of the Ninth Infantry, N G, Pa, died at his home in Hazelton, Pa., December 1, aged 77

Eugene James Gallagher, M D Albany (N Y) Medical College, 1892, aged 47, a member of the Medical Society of the State of New York, district health inspector of Yonkers, N Y, formerly chief of the Kingston, N Y., City Hospital and health officer of that city, died in the Polyclinic Hospital, New York City, December 3, from disease of the kidney

Asa Pingree Reed, M D Tufts College Medical School, Boston, 1895, aged 59, a member of the Maine Medical Association, formerly of Naples, Maine, but for the last three years a member of the staff of the Douglass Sanitarium, Dorchester, Boston, also a druggist and editor of the *Physicians' Drug News,* was found dead in his office, December 2

Jesse Porter Hendrick, M D University of Texas, Galveston, 1893, aged 50, a member of the State Medical Association of Texas and a well-known practitioner of Huntsville, who was operated on for appendicitis in a sanatorium in Houston, November 18, and was apparently doing well, died suddenly, November 22, from cerebral hemorrhage

James Walter Baird, M D College of Physicians and Surgeons, Baltimore, 1874, aged 65, formerly a member of the Medical Society of Virginia, died at his home near Waverly, Surry County, Va, November 30, from the effects of a gunshot wound of the head believed to have been self-inflicted while suffering from depression due to ill health

Joseph McDowell McKamey, M D University Medical College, Kansas City, Mo, 1910, aged 33, a member of the Kansas Medical Society, of Kingman, Kan, whose skull was fractured in a collision between his automobile and a railway train at a grade crossing at Pretty Prairie, Kan, died in a hospital in Kansas City, December 2

George Washington Welty, M D Bellevue Hospital Medical College, 1870, aged 70, a member of the Medical Society of the State of New York, for many years a member of the Brooklyn Charities Board and director of St Vincent's Home for Friendless Boys, Brooklyn, died at his home in that city, December 1, from heart disease

Lansing Van Auken, M D Albany (N Y) Medical College, 1892, a member of the Medical Society of the State of New York, pastor of the First Presbyterian Church at Watervliet, N Y, and inventor of a well-known shock absorber for automobiles, died at his home in Watervliet, November 27

Walter I Pennock, M D University of Pennsylvania, Philadelphia, 1888, aged 47, a Fellow of the American Medical Association and for twenty years a practitioner of Philadelphia, died at his home in that city, November 28, from a gunshot wound, self-inflicted, it is believed, with suicidal intent

William M Stratton, M D Northwestern University Medical School, Chicago, 1870, aged 71, formerly a member of the Minnesota State Medical Association and for more than forty years a practitioner of Granite Falls, died at his home in that place, November 9, from cerebral hemorrhage

Merritt Walter Hall, M D Chicago College of Medicine and Surgery, 1910, aged 31, a Fellow of the American Medical Association, of Chicago, died at the home of his mother in that city, December 4, from the effects of poison believed to have been self-administered with suicidal intent

Avery E Moore (license, Arkansas, 1903), aged 59, deputy auditor of state of Arkansas from 1898 to 1905, and auditor of state from 1906 to 1910, when he resigned to become a member of the state tax commission, died at his home in Enders, Ark, November 22, from tuberculosis

Jonas Muller, M D University and Bellevue Hospital Medical College, 1913, aged 25, president of the medical board of the Bedford Hospital and Dispensary, Brooklyn, died in the Jewish Hospital, Brooklyn, December 2, two weeks after a surgical operation on the nose

Benjamin L Smith, M D University of Maryland, Baltimore, 1859, aged 77, a member of the Medical and Chirurgical faculty of Maryland, twice a member and for five terms chief clerk of the House of Delegates, Maryland, died at his home in Madison, Md, November 23

John A. Brill, M D Cincinnati College of Medicine and Surgery, 1884, aged 64, a member of the Illinois State Medical Society and a well-known practitioner of the northwest side of Chicago, died at his home in that city, December 4, from cerebral hemorrhage

William H Bogle, M D Jefferson Medical College, 1885, aged 58, for several years division surgeon for the Missouri Pacific Railway and local surgeon for the Santa Fe and Burlington systems at Atchison, Kan, died at his home in that city, November 30

John William Wickham, M D Vanderbilt University, Nashville, Tenn, 1885, aged 55, of Palmyra, Tenn, who was shot November 29 in a quarrel at Hackberry, Tenn., b Charles Baggett, died from his wounds in a hospital at Nashville, November 30

Calvin Starr, M.D. Western College of Homeopathic Medicine, Cleveland, 1851, aged 93, a practitioner of Iowa City, Iowa, from 1857 to 1877 and thereafter a resident of Nebraska City and Beatrice, Neb., died at his home in the latter city, November 25.

Aaron B. McCallon, M.D. College of Physicians and Surgeons, Dallas, Texas, 1907, aged 37, of Cresson, Texas, a member of the State Medical Association of Texas, was shot and instantly killed in an affray on the main street of Cresson, September 24.

Elmer E. Horn, M.D. Medico-Chirurgical College of Philadelphia, 1889, aged 53, surgeon to the North Pennsylvania Hospital and Sanatorium, later a practitioner of Linden, Pa., died in the Williamsport (Pa.) Hospital, December 2, from carcinoma.

Ernest David Disbrow, M.D. Rush Medical College, 1880, aged 57, a member of the Illinois State Medical Society, formerly secretary of the Grand Rapids (Mich.) Academy of Medicine, died at his home in Chicago, December 4, from cerebral hemorrhage.

Nathaniel Ritter, M.D. Jefferson Medical College, 1861, aged 76, for fifty-four years a practitioner of Lehigh County and Allentown, Pa., was instantly killed November 21 near Amityville, Pa., by the overturning of an automobile in which he was riding.

Commodore Perry Devore, M.D. Eclectic Medical Institute, Cincinnati, 1871, aged 77, for many years a practitioner of Sutter, Calif., but for the last nine years a practitioner of Drain, Ore., died at his home in that place, November 19, from heart disease.

Morgan Propst, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1884, aged 65, physician of Fillmore County, Neb., and a member of the Board of Health of Geneva, Neb., died at his home in that city, October 9, from uremia.

John O. Foree, M.D. University of Louisville, Ky., 1888, aged 60, a member of the Tennessee State Medical Association, a well-known practitioner and druggist of Athens, Tenn., died at his home in that place, November 26, from pneumonia.

Gregory Paul (examination, N. Y., 1888), aged 57, a native of Asia Minor and an alumnus and for many years professor of medicine in the University of Aintab, Turkey, died in the Post-Graduate Hospital, New York City, November 23.

James A. Porter, M.D. Detroit Medical College, 1869, aged 70, for many years a practitioner of Brooklyn, Mich., and a specialist on diseases of the eye and ear, was found dead, from heart disease, in his barn in Brooklyn, November 27.

Laughlin Sinclair, M.D. University of Michigan, Ann Arbor, 1864, Victoria College, Coburg, Ont., 1867, aged 76, dean of the medical profession of Bruce County, Ont., died at his home in Walkerton, Ont., September 21, from uremia.

Henry Harrison Riegel, M.D. Jefferson Medical College, 1857, aged 79, continuously a practitioner of Pennsylvania for fifty-eight years, a Fellow of the American Medical Association, died at his home in Catasauqua, November 25.

John Antis, M.D. College of Physicians and Surgeons of the Western District of New York, Fairfield, 1837, aged 98, since 1845 a practitioner of Grundy County, Ill., died at the home of his daughters in Mazon, Ill., November 25.

George B. Newell Clow, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1880, Rush Medical College, 1883, aged 59, a Fellow of the American Medical Association, of Oakland, Calif., died in Palo Alto, Calif., November 23.

Samuel A. Woods, M.D. Jefferson Medical College, 1900, aged 39, a Fellow of the American Medical Association, a well-known practitioner of Sharon and coroner of Mercer County, Pa., died at his home in Sharon, November 24.

Samuel Milton Littlefield, M.D. Rush Medical College, 1884, aged 55, a member of the Iowa State Medical Society and a practitioner of Andrew, Iowa, died in the Iowa Sanitarium, Maquoketa, November 30, from nephritis.

Beatty R. Spurr, M.D. Transylvania University, Lexington, Ky., 1848, aged 90, for more than thirty years a practitioner of Greendale, Ky., and later a resident of Stroud, Okla., died at his home in that city, November 4.

Thomas Jefferson Upshaw, M.D. American Medical College, St. Louis, 1890, aged 71, a veteran of the Civil War and for many years a practitioner of St. Louis, died at the home of his son in that city, November 22.

James Mack Sharet, M.D. University of Tennessee, Nashville, 1874, aged 44, a member of the Florida Medical Association, of Milton, Fla., died in the Pensacola Hospital, November 11, from intussusception.

Albert Augustus Lindabury, M.D. Baltimore Medical College, 1886, Hahnemann Medical College, Philadelphia, 1890, aged 53, of Scranton, Pa., died in the Scranton State Hospital, November 22, from diabetes.

Francis A. Mitchell, M.D. University of Louisville, Ky., 1883, aged 82, for many years a practitioner and druggist of New Albany, Ind., died at his home in that city, November 25, from cerebral hemorrhage.

Adelard M. Brunelle, M.D. University of Minnesota, Minneapolis, 1886, aged 58, a member of the Minnesota State Medical Association, died at his home in Cloquet, Minn., November 25, from heart disease.

Wilkins T. Brandon, M.D. Vanderbilt University, Nashville, Tenn., 1880, aged 56, formerly a member of the State Medical Association of Texas, died at his home in Fulbright, Texas, October 19, from nephritis.

John Patrick Stanton, M.D. University and Bellevue Hospital Medical College, New York City, 1899, of Scranton, Pa., was instantly killed in an automobile accident near Wilkes-Barre, Pa., November 24.

Charles F. O'Neill, M.D. Michigan College of Medicine and Surgery, Detroit, 1897, aged 44, of Middleton, Mich., died in St. Mary's Hospital, Grand Rapids, Mich., November 19, from pulmonary embolism.

Merle Cornelius Newkirk, M.D. Johns Hopkins Medical School, Baltimore, 1913, aged 28, of Sherman, N. Y., died at the home of his parents in Ellicottville, N. Y., November 23, from disease of the throat.

Clifford J. Oliveros, M.D. Baltimore University School of Medicine, 1890, aged 49, of Columbia, S. C., a specialist on diseases of the eye, ear, nose and throat, died at his home in Columbia, November 17.

C. N. Frazier (registration, Oklahoma, 1908), a member of the Oklahoma State Medical Association, aged 37, died at his home in Hugo, Okla., September 3, from congestion of the liver.

Orson Gregory Dibble, M.D. New York University, New York City, 1869, aged 75, for fifteen years health officer of the town of Pompey, N. Y., died at his home, November 24.

William Henry Morse, M.D. Bellevue Hospital Medical College, 1871, aged 65, died at his home in Bronx Borough, New York City, November 26, from cerebral hemorrhage.

J. Benson Hill (license, Michigan, twelve years of practice, 1900), aged 71, for twenty-seven years a practitioner of Ovid, Mich., died at his home in that place, November 23.

Thomas Jefferson Sherlock, M.D. Eclectic Medical Institute, Cincinnati, 1893, aged 70, of Hart, Mich., died in Butterworth Hospital, Grand Rapids, Mich., November 20.

Edward M. Royall, M.D. Medical College of the State of South Carolina, Charleston, 1849, aged 88, died at his home in Mt. Pleasant, S. C., about November 23.

William D. Chase, M.D. Hospital College of Medicine, Louisville, 1904, aged 40, was found dead in bed at his home in Milligan College, Tenn., November 21.

John A. Welch, M.D. Central College of Physicians and Surgeons, Indianapolis, 1883, aged 68, died at his home in Lena, Ind., November 18, from nephritis.

Henry Eugene Robinson, M.D. University of Colorado, Boulder, 1911, aged 30, of Ogden, Utah, died in Hooper, Utah, November 20, from tuberculosis.

Samuel J. Stone, M.D. Chicago College of Medicine and Surgery, 1914, aged 35, died suddenly in his office in Butte, Mont., October 3, from uremia.

David Yiengst Roebuck, M.D. University of Pennsylvania, Philadelphia, 1866, aged 71, died at his home in Dalton, Ohio, about November 20.

Peter H. Banta, M.D. Detroit College of Medicine, 1900, aged 41, died at his home in De Witt, Mich., November 26, from disease of the stomach.

Leopold Charles Shulke, M.D. St. Louis College of Physicians and Surgeons, 1905, aged 32, died at his home in Decatur, Ill., November 19.

Bezaleel Bell Andrews, M.D. Hahnemann Medical College, Chicago, 1878, aged 70, died at his home in Nemaha, Neb., about November 16.

A. W. Goodman, M.D. University of Nashville, Tenn., 1862, aged 75, died at his home in Elkton, Ky., November 19.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

OZOMULSION

Ozomulsion is one of several nostrums put out by the T A Slocum Company of New York City Nearly ten years ago Mr Samuel Hopkins Adams (*Collier's*, Jan 13, 1906) had something to say about the Slocum nostrum factory and the man who was at that time proprietor of the concern, one A Frank Richardson To quote from part of Mr Adams' article

> "The Slocum Consumption Cure proper consists of a gay-hued substance known as 'Psychine' Psychine is about 16 per cent alcohol, and has a dash of strychnin to give the patient his money's worth Its alluring color is derived from cochineal It is 'an infallible and unfailing remedy for consumption' Ozomulsion is also a sure cure, if the literature is to be believed To cure one's self twice of the same disease savors of reckless extravagance, but as 'a perfect and permanent cure will be the inevitable consequence,' perhaps it's worth the money It would not do to charge Dr T A Slocum with fraud, because he is, I suppose, as dead as Lydia E Pinkham, but Mr A Frank Richardson is very much alive, and I trust it will be no surprise to him to see here stated that his Ozomulsion makes claims that it cannot support, that his Psychine is considerably worse, that his special cure offer is a bit of shameful quackery, and that his whole Slocum Consumption Cure is a fake and a fraud so ludicrous that its continued existence is a brilliant commentary on human credulousness"

The nostrum, "Psychine" which, previous to the passage of the Food and Drugs Act, was labeled "An Infallible Remedy for Consumption" to be later modified to "Wonderful Remedy for Consumption" and still later to be changed to "Tonic Appetizer and Aid to Digestion" has, apparently, not occupied much space in the public prints during the last few years Ozomulsion, however, has, apparently, been kept alive by advertising In April, 1915, the United States Attorney for the Southern District of New York, acting on a report by the Secretary of Agriculture, filed two informations against the T A Slocum Company, alleging that the concern had shipped two consignments of Ozomulsion from the state of New York into the state of Tennessee in violation of the Food and Drugs Act The product was declared misbranded in both informations on the ground that the therapeutic claims made on the carton were "false and fraudulent" Moreover, the government declared that these claims

> " were applied to said article knowingly and in reckless and wanton disregard of their truth or falsity, so as to represent falsely and fraudulently to the purchasers thereof, and create in the minds of purchasers thereof the impression and belief that it was in whole or in part composed of, or contained, ingredients or medicinal agents effective for permanently curing tuberculosis, consumption, phthisis, whooping cough, pneumonia, and all kinds of lung diseases, St Vitus's dance, epilepsy, night sweats, and malaria, when, in truth and in fact, said article was not in whole or in part composed of and did not contain ingredients or medicinal agents effective for curing tuberculosis, consumption, phthisis, whooping cough, pneumonia, and all kinds of lung diseases, St. Vitus's dance, epilepsy, night sweats, and malaria"

The product was declared misbranded further because of the claims made that Ozomulsion would cure pneumonia and prevent the development of consumption "when in truth and in fact, said article was not in whole or in part composed of, and did not contain, ingredients or medicinal agents effective for curing pneumonia or for preventing the development of consumption following pneumonia, or at any other time"

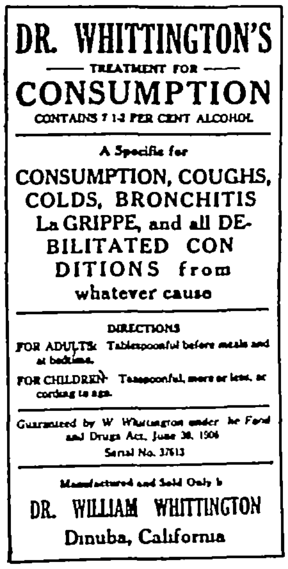
The analysis made by the federal chemists was summed up in the statement "sample appears to be an emulsion of cod liver oil and glycerin with the addition of phosphorous compounds of calcium and sodium" The chemists also call attention to the fact that their tests indicated that the cod liver oil used in this emulsion "had not been ozonized" This claim about "ozonizing" the oil used in the nostrum has long been one of the talking points, in fact the old trade-package declared that Ozomulsion was a combination of ozone, cod liver oil and other ingredients "OZONIZED BY ELECTRICITY (Slocum's French method) for the purpose of replacing by ozone the oxygen consumed by the system in digesting cod liver oil"

The T A Slocum Company pleaded guilty to the government's charges and was fined $80 This can hardly be considered an excessive punishment for a concern engaged in the business of defrauding the sick in general and consumptives in particular The details of this case will be found in *Notice of Judgment 3979*, issued Oct 21, 1915

DR WHITTINGTON'S TREATMENT FOR CONSUMPTION

"Dr Whittington's Treatment for Consumption" is, according to the label, "manufactured and sold only by Dr William Whittington, Dinuba, Cal" According to our records, Dr William Whittington was graduated by the Missouri Medical College of St Louis, Mo, in 1880 and was licensed to practice in California in 1891 The preparation, which admittedly contains 7 5 per cent alcohol, is labeled

> "A Specific for Consumption, Coughs, Colds, Bronchitis, La Grippe and All Debilitated Conditions from whatever cause"



DR. WHITTINGTON'S
TREATMENT FOR
CONSUMPTION
CONTAINS 7 1-2 PER CENT ALCOHOL

A Specific for
CONSUMPTION, COUGHS,
COLDS, BRONCHITIS
La GRIPPE, and all DEBILITATED CONDITIONS from
whatever cause

DIRECTIONS
FOR ADULTS: Tablespoonful before meals and at bedtime.
FOR CHILDREN: Teaspoonful, more or less, according to age.

Guaranteed by W Whittington under the Food and Drugs Act, June 30, 1906
Serial No. 37613

Manufactured and Sold Only by
DR. WILLIAM WHITTINGTON
Dinuba, California

Reduced photographic facsimile of the label on Whittington's "consumption cure" It obviously violates the federal Food and Drugs Act.

The bottle contains about twelve ounces of a brown, sirupy liquid and sells for $5 00 In reply to an inquiry sent to Whittington by a supposedly consumptive layman, there came a letter signed "W Whittington," reading in part as follows

> " I have a treatment that DOES CURE CONSUMPTION The cost of the treatment is $20 00 for each month's treatment You can get it one month at a time or more as you like If you wish to try it you better take one month's treatment at first to see what it will do for you But if you take it for one month I know you will send back for more For I know it will do you good For THIS IS THE ONLY TREATMENT THAT DOES REALLY CURE CONSUMPTION As to how long you will need to take it depends on your condition It takes from three to six months to cure If you have not had it long three months may cure you If you are very bad it will take longer "—[Capitals ours —Ed]

Requests have come in at different times for information regarding this nostrum A bottle of Whittington's "Specific" was examined in the Chemical Laboratory of the American Medical Association The condensed report of the chemist follows

"The liquid had an odor of raspberry and prunes and also somewhat vinous characteristics, with a tannin-like taste The reaction toward litmus was acid The specific gravity at 15 6 C was 1 0963 The weight of ash from 100 c c was 0 73 grams Qualitative tests indicated the presence of alcohol, magnesium, tannin and other vegetable acids, acetate, sugar, glycerin, and traces of calcium, potassium and sodium Tests for the following yielded negative results heavy metals, haloids, sulphates, alkaloids, emodin-bearing drugs, benzoate, cinnamate, salicylate and glycyrrhiza From this analysis it appears that 'Dr Whittington's Treatment for Consumption' is a flavored syrup, devoid of potent ingredients other than alcohol"

Selling flavored syrup as a "cure" and "specific" for consumption is a disreputable enough business under any circumstances, but what shall be thought of a physician who will carry on such a trade? Whittington's case is of more than ordinary interest to the medical profession because the man is not only a member of that profession, but a member of the Medical Society of the State of California.

ROGERS' CONSUMPTIVE CURE AND COUGH LOZENGES

"Rogers' Consumptive Cure and Cough Lozenges" and "Rogers' Inhalant" were two products sold by the M. J. Rogers Medical Company of Lewiston, Maine. According to a government report the former product bore on the labels such claims as:

> Rogers Consumptive Cure and Cough Lozenges. Are good for Lung Troubles of all kinds.
>
> For Whooping Cough they are a ready relief.'
>
> For Coughs, new and of long standing they are unsurpassed.
>
> They can be *confidently relied upon* as an *infallible cure* for all pulmonary troubles of every description.'
>
> warranted to effect entire and permanent cures in every case curable at *all*.'

The latter preparation bore such claims as:

> Rogers' Inhalant Is the Greatest Discovery of Modern Medical Science for the positive cure of Catarrh, Asthma, Hay Fever, Rose Cold, Cold in Head, Influenza, Headache, Pneumonia, Bronchitis, Diphtheria, Hoarseness, Loss of Voice, Bleeding of the Lungs, Pleurisy, and all diseases leading to Consumption.

The government officials filed an information against the M. J. Rogers Medical Company alleging that these two products, which had been shipped in interstate commerce, were misbranded because of the false and fraudulent claims for curative effect that had been made for them. The government chemists, who analyzed both the lozenges and inhalant, reported that the former "consists of sugar lozenges containing a small amount of gum and a trace of oil of rosemary" and that the latter was "an alcoholic solution of volatile oil, chiefly rosemary." The false and fraudulent therapeutic claims made, only a few of which we have quoted, were declared by the federal officials to have been applied to the articles "knowingly and in reckless and wanton disregard of their truth or falsity." This concern did not plead guilty but entered a plea of *nolo contendere* which was equivalent to admitting that they were not prepared to substantiate the claims they had made. The M. J. Rogers Medical Company was fined $15, the case being described in *Notice of Judgment 3986* issued Oct. 21, 1915.

Correspondence

The "Autolysin" Treatment for Cancer

To the Editor:—In the Nov. 6, 1915, issue of The Journal there was printed a special article by Dr. Richard Weil regarding the autolysin treatment of cancer. In this article Dr. Weil attempts to analyze the situation respecting autolysin, the method of its introduction in the General Memorial Hospital and the nature of the patients who were treated in this institution, and states what his own conclusions are regarding its merits. It has been difficult for me to believe that Dr. Weil would so wilfully misrepresent the entire situation.

Dr. Weil was a member of my department in the medical school for many years, so that I am well acquainted with him. I cannot believe, however, in this instance that he is acting solely from good motives in making the statements that he has printed. I know, personally, that his present statements are not at all in accord with the views which he expressed to me at the time the work was in progress at the hospital.

It is impossible for me to make an adequate reply to his statement without analyzing it in detail. Such a statement has been prepared and is evidently in its length and its character unsuitable for publication in The Journal. It will, however, be printed elsewhere.

The misrepresentations which Dr. Weil has made occur not only in the form of direct categorical statements but also in the inferences which a reader unacquainted with the matter would necessarily draw from the article. These misrepresentations include such matters as the circumstances surrounding the introduction of the remedy into the hospital, the character of the patients treated in the institution and the results obtained, as well as his own relation to the experiments. He has, furthermore, misrepresented my own ideas and statements with respect to the effects produced by the remedy and the limitations surrounding its use. He has likewise made statements from which the only inference that can be drawn is that the remedy is withheld from the general use of the medical profession and that no patients can obtain this treatment except by paying very large fees. Such inferences are unjust.

A considerable amount of space is devoted to pictures and reading matter concerning a patient who received one injection of autolysin at this office and later went to the Memorial Hospital. It would appear from what Dr. Weil has said that the circumstances which he relates concerning this patient are circumstances for which I am personally responsible. I can only state in this connection that I have printed two articles in a medical journal stating my own position with regard to the autolysin treatment, and that I disclaim all responsibility for newspaper or magazine articles which have appeared in the past or may appear in the future respecting this matter.

The final conclusion which Dr. Weil draws is that from a long observation he believes the method is useless. I think it is only fair to point out that Dr. Weil's long observation consists in never having administered a single dose of autolysin and in having given very superficial examination to a few patients in an advanced condition of inoperable cancer during the early developmental period of the treatment. Final conclusions in my judgment cannot be based on such data.

Honest criticism of this method of treatment, based on adequate experience, is to be welcomed. Untruth and misrepresentation do not contribute to the progress of medical affairs in this instance to any greater degree than they have in the past. My own experience justifies me in the belief that the autolysin method of treating inoperable cancer has decided value in ameliorating the distressing conditions in a considerable percentage of cases.

S. P. Beebe, M.D., New York.

Removal of Thyroid in Diabetes

To the Editor:—Encouraged by the experience of having several cases of glucosuria associated with exophthalmic goiter clear up when the hyperthyroidism was corrected, two cases of diabetes in young subjects with no goiter symptoms were treated by removing the greater portion of the thyroid gland. The results were as follows: One was restored to complete carbohydrate tolerance, the other to a tolerance of 9 ounces of carbohydrates per day. As only a few months have passed since these cases were so treated, end-results are yet to come, but until such time, together with a record of more cases, please publish this to establish my priority should the idea prove of value.

J. Christopher O'Day, M.D., Portland, Ore.

"Sewage" and "Sewerage"

To the Editor:—In your effective educational work would it not be proper to clarify an alliterative entanglement? The two nouns "sewage" and "sewerage" offer difficulties to many, as does the impossible "preventative." Sewage flows within the sewerage, the former is the liquid, the sewerage being the system of pipes which carries it off. The only sewage system is the intestinal canal, but a sewerage system is always the mains, conduits and other pipes *in the ground*. *Sewage disposal is any* method of depositing or getting rid of the excreta, whether by privy, by the use of sewers or a sewage treatment plant. If the sewers are dug up out of the ground and thrown away, that would constitute sewerage disposal Very frequently one sees the incorrect expressions "sewerage treatment" and "sewerage purification" Sewage is the liquid discharge—sewerage always the pipe, the connected sewers

Harold B Wood, M D,
Health Officer and Secretary, Department of Health, Topeka, Kan

Music as a Therapeutic Agent

To the Editor —I desire information concerning the use of music by the medical profession Some time ago Dr Kane reported his use of music as an aid in the operating room, and also in the wards of the hospital His report was followed by a series of humorous comments, which did not take the effort at all seriously As far as I know, the hospitals for the insane are practically the only ones that make extensive use of music as a therapeutic agent, but I should like to receive further first-hand information Just a little thought ought to convince any one that music could be used on logical grounds much more frequently than it is at present

Theodore Zbinden, M D, Toledo, Ohio

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

DROPPING OF PULSE BEATS

To the Editor —Please explain the cause or causes for the dropping of pulse beats at the wrist every third or fifth beat In many of these cases auscultation reveals only a lack of full contraction of the left ventricle, with no disturbance of rhythm in other respects Does it indicate degeneration of the musculature of the heart or merely a nervous manifestation? Is digitalis the best treatment?

G A Hill, M D, Philadelphia

Answer —By far the most common cause (in about 90 per cent of cases) of the dropping of pulse beats at the wrist is the occurrence of premature contractions or extrasystoles Normally the heart beat is induced in the sinus node (Keith-Flack), situated in the wall of the right auricle, and spreads over the heart from auricles to ventricles in an orderly sequence and at definitely timed intervals This sinus node is often designated as the pace maker of the heart In the case of extrasystoles an (ectopic) impulse arises early in diastole in some other portion of the heart which is more irritable than the sinus node This abnormal impulse causes the heart to beat too soon, or before the normal excitation from the pace maker is due Hence the volume of blood discharged by the ventricles is less than normal, and often is not of sufficient volume to produce a pulse wave at the wrist At other times the contraction of the ventricle may not overcome the pressure in the aorta, and in this event there is no pulse wave, and auscultation reveals only the first sound of the heart

In a small group of cases of extrasystole there is no evidence of cardiac disease In another group there is disease in another part of the body which could easily be accompanied by a pathologic condition of the heart Some of the most common of these are bronchitis, pulmonary emphysema, pulmonary tuberculosis, toxemia, exophthalmic goiter and gastric ulcer In the majority of cases, however, there is distinct cardiac involvement, as in myocarditis, valvular disease, acute endocarditis, arteriosclerosis or angina pectoris

Another cause for the dropping of pulse beats at the wrist is the condition of gross irregularity of the heart known as auricular fibrillation Here the auricle does not beat in response to the pace maker, but is in a state of fibrillation Only a few of these auricular contractile waves pass through the auriculoventricular bundle and cause ventricular contraction, but these are very irregularly timed, and may follow each other so soon as not to cause ventricular contraction of sufficient volume to produce a pulse wave at the wrist or even to raise the aortic valves In all of these cases there is more or less myocardial insufficiency, especially of the auricles

Finally, partial heart block may occasion the dropping of ventricular beats In this condition the auricles beat normally in response to impulses originating in the sinus node, but there is impairment in the conduction of the impulse through the auriculoventricular bundle Each succeeding impulse is delayed more at the bundle until an impulse fails to get through, and a ventricular contraction is missed The repetition of this process results in periodic failure or ventricular contraction and the consequent dropping of pulse beats at the wrist

It is impossible to generalize on the treatment of these conditions This must depend largely on the concomitant disease When there is evidence of myocardial insufficiency or loss of cardiac tone, digitalis may be of value

Cardiac irregularities and their treatment were discussed recently in an editorial on "The Rhythm of the Heart" (The Journal, Oct 21, 1915, p 1462) An excellent discussion of this subject will be found in Thomas Lewis' "Clinical Disorders of the Heart Beat," Edition 2, Shaw & Sons, London

MIST. HELONIN COMP (SCHLOTTERBECK'S)

To the Editor —Please give me any information you have about Compound Mixture of Helonin (Schlotterbeck & Foss, Portland, Me)

E F Howard, M D, Vicksburg, Miss

Answer —So far as we know, the only available information regarding the composition of Schlotterbeck's Mist Helonin Comp is the statement in a circular that the "active ingredients are Helonin, Senecin, Avenin," and the declaration on the label that it contains 45 per cent alcohol That is, apparently we are to assume that the mixture contains unspecified amounts of some kind of derivatives (claimed to be "resinoids") of false unicorn (*Helonias dioica*), liferoot (*Senecio aureus*) and oats (*Avena sativa*) Oats are practically devoid of resin, but this fact and the failure of the manufacturers to state the quantities are unimportant in view of the further fact that false unicorn, liferoot and oats are generally recognized as worthless drugs Essentially, Mist Helonin Comp appears to be a "bracer" nostrum The alcohol content is that of strong whisky The mixture is highly flavored and would undoubtedly be relished by those to whom alcoholic drinks appeal, while the practically inert drugs contained in it would not in the least interfere with its use as a cordial It is impossible to condemn too strongly the recommendations that it be given to young girls and pregnant women The recommendation that in dysmenorrhea teaspoonful doses should be given "every fifteen or twenty minutes until relief is obtained" means, of course, until the patient is stupefied or drunk On the basis of the information supplied by the manufacturers, Mist Helonin Comp may be classified as a vicious and a worthless nostrum—unless we regard the alcohol as of value

COAGULEN

To the Editor —Will you kindly refer me to literature on the product coagulen? Have there been any articles published about the use of this preparation in pulmonary hemorrhage? If so, what?

John J Lloyd, M D, Catawba Sanatorium, Va

Answer—The subject appears to be still in an experimental stage The only experimental work done on animals thus far seems to be that reported by Fonio, one of the discoverers of coagulen He found that the coagulability of the blood was increased for only an hour after intravenous injection of the substance

The other papers are reports of clinical experience, and the only ones that deal with the treatment of hemoptysis with coagulen are those of Juliusburger, Hotz, and Riedl Each of these authors reports on one case only of hemorrhage of the lungs treated by intravenous injections of coagulen The case of Riedl was that of a hemophilic who had severe pulmonary hemorrhages In all three cases the hemorrhages, which were occurring nearly every day, were checked after its use and did not recur within six weeks after the injection Of course, little significance can be attached to clinical cases observed singly, especially when, as in the present case, the probability of any connection between the remedy and the results attributed to it is discounted by animal experiment

These three clinicians noted no bad general effects following the intravenous injection of coagulen, nor have any cases of thrombosis or embolism been reported Fonio himself, however, has noted a kind of collapse effect following the use of coagulen on animals It is this fact which has deterred Albrecht from making use of coagulen intravenously He found that it had little effect on arterial or venous hemorrhages because the coagula produced by the coagulen are washed away by the oncoming blood

A description of coagulen appeared in The Journal, Sept. 25 1915, p 1111

Below is a list of the more accessible papers and reports on coagulen that have appeared during the last two years

Fonio A Cor Bl. f schweiz. Aerzte, 1913 Nos. 13 14, 15
Obermuller H Munchen med Wchnschr 1913, No 51, p 2832
Kausch W Deutsch med Wchnschr, 1914, No 15 p 754
Fonio A. Mitt. a d. Grenzgeb d Med u Chir, 1914 xxvii, 642
Juliusburger E Deutsch. med Wchnschr, 1914 xl, 1668
Barth, E Deutsch med Wchnschr 1914, xl, 1573
Riedl, H Wien klin Wchnschr 1915 xxviii, 7
Mutschenbacher, T von Budapesti Orvosi Ujsag, 1914, No 25, p 331
Mutschenbacher T von Deutsch med Wchnschr, 1914 xl, 1669
Vogt E Deutsch med Wchnschr 1914 No 26 p 1315
Tarnowsky G de Surg Gynec and Obst May 1914 p 641
Hotz G Deutsch med Wchnschr 1914, No 29 p 1475
Albrecht H Zentralbl f Gynak, 1914, xxxviii 1185

INCOMPATIBILITY OF QUININ WITH ASPIRIN AND OTHER ORGANIC ACIDS

To the Editor —In the *Bulletin of Pharmacy* for November is an article relative to the incompatibility of aspirin and quinin, and the report of a death supposed to have been caused by this combination What is your opinion on this question?

A. P Standard M D, Macomb Ill

To the Editor —My attention has recently been called to the possibilities of the formation of a poisonous compound, when aspirin and quinin are administered together or near each other I have been informed that there have been a few fatalities and a number of nearly fatal cases resulting from this combination If such is possible I would be glad to have more information in regard to the matter and believe there are others who would be very glad to learn this through The Journal, rather than by the personal experience of having a patient die from such a combination H F T Iowa.

Answer —It has been known for a number of years that, by long-continued heating with glacial acetic acid or by fusion of the alkaloidal salts, some of the cinchona alkaloids may be converted into isomeric products which possess extremely poisonous properties Experiments have also shown that, by acting as catalyzers, slightly dissociated acids, such as acetylsalicylic (aspirin), citric, malic, acetic or tartaric acid under the influence of heat may convert quinin into its poisonous isomer, quinotoxin, and cinchonin into cinchotoxin At the temperatures of from 98 to 102 C (208 4 to 215 6 F) the conversion is practically quantitative, at 37 C (98 6 F—normal body temperature) the reaction goes on much more slowly, amounting to about 2 per cent in forty-eight hours The danger of poisoning through conversion of quinin into quinotoxin in the body cannot be great, but it is well to keep the possibility in mind The formation of a dangerous amount of the poisonous product would probably be greatly favored if the mixture—quinin and aspirin, for instance—had been made up for some time Suspensions of the alkaloid in flavored syrups with organic acids, etc. might be regarded with suspicion, likewise elixirs such as iron, quinin and strychnin, which usually contain citrates or tartrates The foregoing applies especially to the alkaloid and to such salts as quinin tannate Since conversion into the toxic isomer does not take place appreciably with an excess of strong mineral acid, there could be but little danger from the administration of the mineral acid alkaloidal salts such as quinin sulphate.

The subject has not been studied sufficiently to make it possible to decide in each case of supposed quinin poisoning whether the toxic symptoms were due to overdose, to idiosyncrasy or to formation of quinotoxin or cinchotoxin in mixtures administered

HARRISON NARCOTIC LAW AND THE DELIVERY OF DRUGS

To the Editor —Would it be a violation of the Harrison law for a druggist to fill a prescription that I give him for a patient of mine and send it to the patient by mail R F D? Every farmer in this county gets his mail by rural route and frequently it is a great convenience to send medicine by mail. It saves them a trip to town

R. D Z

Answer.—The Harrison Narcotic Law makes no provisions regarding the manner in which the drug shall be delivered to the patient by the druggist. After the druggist has filled the prescription, he may deliver it to the patient in person, by messenger, by mail or by express The object of the law is to secure a written record of every transaction involving the drugs covered by the law

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama Montgomery, Jan 11, 1916 Sec., Dr W H Sanders, Montgomery

Alaska Juneau Jan 4 1916 Sec. Dr Harry C DeVighne, Juneau

Arizona Phoenix Jan 4 5, 1916 Sec, Dr John Wix Thomas, National Bank of Arizona Bldg Phoenix

California Sacramento Jan 11 1916 Sec Dr Charles B Pinkham Room 527 Forum Bldg, Sacramento

Colorado Denver Jan 4, 1916 Sec. Dr David A Strickler, 612 Empire Bldg Denver

District of Columbia Washington Jan 11, 1916 Sec., Dr Edgar P Copeland, The Rockingham Washington

Indiana Indianapolis Jan 11, 1916 Sec, Dr W T Gott 84 State House Indianapolis

Minnesota Minneapolis Jan 4 7, 1916 Sec, Dr Thomas S McDavitt 814 Lowry Bldg St. Paul

New Hampshire Concord December 20 21 Sec Dr W T Crosby, The Beacon Manchester

New Mexico Santa Fe Jan 10, 1916 Sec, Dr W E Kaser, East Las Vegas

North Dakota Grand Forks, Jan. 4 7 1916 Sec. Dr G M Williamson Grand Forks

Oklahoma Oklahoma City Jan 11 12 1916 Sec., Dr R V Smith 502 Daniel Bldg Tulsa

Oregon Portland, Jan 4 1916 Sec. Dr L H Hamilton Medical Bldg, Portland

Pennsylvania Philadelphia Jan 18 20 1916 Sec Dr Nathan C Schaeffer Harrisburg

Rhode Island Providence Jan 6 7, 1916 Sec Dr Gardner T Swarts Providence

South Dakota Pierre Jan 11 1916 Sec., Dr P B Jenkins Waubay

Utah Salt Lake City Jan 3, 1916 Sec Dr G F Harding 407 Templeton Bldg, Salt Lake City

Washington Walla Walla Jan. 4 1916 Sec, Dr C N Suttner, Baker Bldg Walla Walla

Wisconsin Madison Jan 11, 1916 Sec Dr J M Dodd 220 E Second St Ashland.

New Jersey June Report

Dr H G Norton secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton June 15-16 1915 The total number of subjects examined in was 9, total number of questions asked, 90, percentage required to pass, 75 The total number of candidates examined was 40, of whom 35 passed and 5 failed Forty-six candidates were licensed through indorsement The following colleges were represented

PASSED

College		Year Grad	Per Cent.
Georgetown University		(1913)	84 3
Howard University		(1914)	75 75 3
College of Phys. and Surgs Baltimore	(1890) 78 7	(1911)	79 3
Johns Hopkins University		(1914)	80 2
University of Maryland		(1914)	75 2
Albany Medical College		(1914)	78 8
Columbia University Coll. of Phys and Surgs		(1915)	80 4
Long Island College Hospital	(1881) 77 1	(1912)	78 7
New York Homeo Med Coll and Flower Hosp	(1915) 79 4	(1913)	78 7
University and Bellevue Hospital Medical College		(1915)	83, 84 4
Hahnemann Medical College and Hosp Philadelphia		(1915)	78 1
Jefferson Medical College	(1914) 75 9 77 4 81 78 3, 81 7 82, 83	(1915)	77 1 77 5
Medico-Chirurgical College of Philadelphia		(1915)	83 6
Univ of Pennsylvania	(1914) 82 83 7 84 1	(1915)	80 3 83 7, 84 3
Woman s Medical Coll. of Pennsylvania	(1914) 88 2	(1915)	82
University of Wurzburg		(1870)	77 3

FAILED

College		Year Grad	Per Cent.
Howard University		(1907)	67 7
Fordham University		(1913)	72 8
University of Naples	(1893) 59 8 (1895) 64 5	(1912)	73 6

LICENSED THROUGH INDORSEMENT

College		Year Grad	Total No Licensed
Columbian University		(1902)	1
Howard University		(1907)	1
Baltimore Medical College	(1903)	(1911)	2
College of Phys. and Surgs. Baltimore	(1911)	(1912)	2
University of Maryland		(1912)	1
Boston University		(1908)	1
Dartmouth Medical School		(1913)	1
Albany Medical College		(1913)	1
Columbia University Coll of Physicians and Surgeons	(1904) (1910) (1913 2)	(1914)	5
Cornell University		(1913)	1
Fordham University		(1909)	1
Long Island College Hospital	(1898) (1899) (1913)	(1914)	4
New York Homeo Medical College and Flower Hosp	(1901)	(1914 2)	3
University and Bellevue Hospital Medical College		(1914)	4
University of Buffalo		(1908)	1
Starling Ohio Medical College		(1908)	1
Hahnemann Medical College and Hospital Phila		(1899)	1

Jefferson Medical College	(1913) (1914)	2
Medico Chirurgical Coll of Phila	(1903) (1905) (1913, 2)	4
University of Pennsylvania	(1900) (1909) (1911, 2)	4
University of Vermont	(1912, 2) (1913)	3
University of Naples	(1893)	1
University of Rome	(1910)	1

Iowa June Report

Dr G H Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Iowa City, June 10-12, 1915 The total number of subjects examined in was 8, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 57, of whom 56 passed and 1 failed Fifteen candidates were licensed through reciprocity The following colleges were represented

PASSED

College	Year Grad	Per Cent.
University of Alabama	(1909)	90 5
Chicago College of Med and Surg	(1915)	83,5 86 5, 88 6, 91 96 6
Northwestern University	(1901)	91 1 (1911) 88, (1915) 90 5, 92
Rush Med Coll	(1905)	89, (1907) 92 2, (1910) 91 9 (1911) 91 9
University of Illinois	(1915)	90 6 92 5, 94
Indiana University	(1911)	81 7
Keokuk Medical College Coll Phys and Surgs	(1900)	83 2
State University of Iowa, College of Medicine	(1915)	82 5, 86 6, 86 7, 86 7 87 2 88, 91 6 91 7 91 7, 92 1 92 2, 92 2, 92 5, 92 5, 93, 93 93, 93 5, 94 9 95 4 95 8 96 6 96 7
State University of Iowa College of Homeo Med	(1915)	90, 92
Hospital College of Medicine, Louisville	(1906)	78 6
Johns Hopkins University	(1915)	90 2
Harvard University	(1915)	86 6, 89 2
Tufts College Medical School	(1912)	90 4
St Louis College of Physicians and Surgeons	(1906)	77
St Louis University	(1915)	88 9, 90 9
John A Creighton Medical School	(1915)	86
Jefferson Medical College	(1914)	93 5
College of Physicians and Surgeons, Memphis	(1910)	91
Queens University	(1914)	91

FAILED

College	Year Grad	Per Cent.
Meharry Medical College	(1909)	66 9

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
College of Physicians and Surgeons Chicago	(1893)	Nevada
Hahnemann Medical College and Hospital Chicago	(1912)	Nebraska
Northwestern University	(1905)	Kansas
Kansas Medical College	(1911)	Kansas
University of Louisville	(1908)	Nebraska
College of Physicians and Surgeons Baltimore	(1895)	Penna
Grand Rapids Medical College	(1907)	Nebraska
St Louis College of Physicians and Surgeons	(1907)	Missouri
St. Louis University	(1914)	Missouri
University Medical College Kansas City	(1904)	Kansas
John A Creighton Medical College	(1910 2) (1911)	Nebraska
Starling Ohio Medical College	(1908)	Ohio
Wisconsin College of Physicians and Surgeons	(1909)	Wisconsin

Tennessee June Report

Dr A B DeLoach, secretary of the Tennessee State Board of Medical Examiners, reports the written examination held at Knoxville, Memphis and Nashville, June 25-26, 1915 The total number of subjects examined in was 8, total number of questions asked, 64, percentage required to pass, 75 The total number of candidates examined was 105, of whom 101 passed, including 12 nongraduates, and 4 failed, including 2 nongraduates The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Birmingham Medical College	(1915)	76
Atlanta Medical College	(1915)	83
Southern College of Medicine and Surgery	(1913)	75 2
Bennett Medical College	(1915)	80 6
Chicago Hospital College of Medicine	(1915)	80 6, 82
Reliance Medical College	(1911)	75
Rush Medical College	(1914)	90 7
Hospital College of Medicine, Louisville	(1900)	79 2
University of Louisville	(1912)	87 1, (1915) 86
Tulane University of Louisiana	(1908)	79 9
Mississippi Medical College	(1911)	76 4
American Medical College	(1910)	77 2
Barnes Medical College	(1904)	80 5
Eclectic Medical University, Kansas City	(1915)	87 6
Homeopathic Medical College of Missouri	(1903)	79 5
St Louis College of Physicians and Surgeons	(1915)	75, 76 6
Columbia University College of Phys and Surgs	(1912)	88
Eclectic Medical College, Cincinnati	(1898)	75, (1910) 81 2
Miami Medical College	(1898)	75
University of Pennsylvania	(1912)	92 2
Lincoln Memorial University	(1913)	78, (1914) 75, 78, 78 5, 79, 79, (1915) 80, 83 5, 85, 92
Memphis Hospital Medical College	(1903)	81 5, (1913) 75
Meharry Medical College	(1911)	76 2, (1914) 75, 81 5, 82, 83 2, (1915) 75, 76 5, 78, 79, 79 6, 80 6, 81, 82 2, 83 4, 83 7 84, 84, 84 5
University of Nashville	(1907)	83 8
University of Tennessee	(1914)	83, 83 5 (1915) 80 85 1, 85 1
Univ of West Tennessee	(1914)	75, 75, 80, 82 7, 85, (1915) 82 2
Vanderbilt University	(1910)	79 (1912) 83 9, (1913) 89 2 (1914) 86, (1915) 77 1, 81, 81 2, 82, 82, 82 1, 82 6, 83, 83, 83 5 84 2, 84 5, 84 8, 85, 85, 86 1, 86 9 87 7 89 3
Nongraduates		75, 75, 75, 75, 75, 75 6, 75 7, 80, 80 6, 83 4, 83 5, 84 9

FAILED

College	Year Grad	Per Cent.
Lincoln Memorial University	(1914)	59
University of Tennessee	(1912)	*
Nongraduates		57, 63

* Withdrew from the examination

Wisconsin June-July Report

Dr J M Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the practical and written examination held at Milwaukee, June 29-30—July 1, 1915 The total number of subjects examined in was 24, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 68, of whom 61 passed and 7 failed, including 1 osteopath Twenty-eight candidates, including 2 osteopaths, were licensed through reciprocity One candidate was granted a reregistration license The following colleges were represented

PASSED

College	Year Grad	Per Cent
Bennett Medical College	(1915)	75, 79
Chicago College of Med and Surg	(1915)	75, 77, 80 82, 82, 87
Rush Medical College	(1915)	86, 88
University of Illinois	(1914)	85, 86, 86, (1915) 79 80 84 88
St Louis University	(1915)	89
University of Pennsylvania	(1913)	86, (1914) 84
Marquette University	(1915)	75 78 79, 79, 79, 79, 79, 79, 79, 80, 80, 80, 81, 81, 82, 82, 82, 83, 83, 83, 83, 83, 83, 83, 83, 84, 84, 84, 84, 84, 84, 84, 84, 85, 85, 85, 85, 86, 89, 89, 89

FAILED

College	Year Grad	Per Cent
Chicago College of Med and Surg	(1914)	60, 66, (1915) 72, 72
Marquette University	(1913)	65
Montreal School of Med and Surg	(1912)	71

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
Chicago College of Med and Surg	(1907) (1913)	Illinois
College of P and S, Chicago	(1903)	Illinois, (1910) Iowa
Hahnemann Medical Coll and Hosp, Chicago	(1913)	Illinois
Northwestern University	(1910) (1912, 2) (1913)	Illinois, (1914 2) Missouri
Rush Medical College	(1893)	Illinois
University of Illinois	(1911) (1914)	Illinois
University of Michigan Medical School	(1905)	Michigan
University of Minnesota	(1905) (1913)	Minnesota
Central Medical Coll St Joseph	(1898)	Idaho
Ensworth Medical College	(1908)	Wyoming
Pulte Medical College	(1888)	Michigan
Western Reserve University	(1912)	Ohio
University of Pennsylvania	(1907)	Penna
College of P and S, Memphis	(1911)	Tennessee
University of Texas	(1898)	Texas
Milwaukee Medical College	(1912)	Illinois
University of Christiania	(1912)	Minnesota

West Virginia July Report

Dr S L Jepson, commissioner of health of the Public Health Council of West Virginia, reports the oral, practical and written examination held at Parkersburg, July 7-9, 1915 The total number of subjects examined in was 9, total number of questions asked, 90, percentage required to pass, 80 The total number of candidates examined was 46, of whom 43 passed and 3 failed One candidate was granted a reregistration license The following colleges were represented

PASSED

College	Year Grad	Per Cent
Birmingham Medical College	(1915)	84 2
College of Physicians and Surgeons, Los Angeles	(1914)	83 6
Atlanta Medical College	(1915)	85 4
Bennett Medical College	(1915)	80 1
Chicago College of Medicine and Surgery	(1915)	81 2, 81 8, 83, 84 6, 85 2, 86 4, 89 1
University of Louisville	(1914)	81 7, 89 3, (1915) 86 6
College of Phys and Surgs Baltimore	(1915)	82 3, 82 6, 83 7, 85 5, 85 8, 86 1, 87 3, 88 5, 90 1, 91 8
Johns Hopkins University	(1915)	87 5
Maryland Medical College	(1912)	80
University of Maryland	(1915)	86 4, 87 4
Boston University	(1915)	86 9
Ohio State Univ, College of Medicine	(1915)	88, 92 5, 92 8
Jefferson Medical College	(1915)	87 2
Medico Chirurgical College of Phila	(1914)	89 5
University of Pennsylvania	(1914)	85 6
University of Pittsburgh	(1914)	88 7
Woman's Medical College of Penn	(1913)	84 9
Meharry Medical College	(1915)	83 3, 88 3
Medical College of Virginia	(1914)	82 8 (1915) 87 5, 89 3
University of Virginia	(1911)	89 3

FAILED

College	Year Grad	Per Cent
Bennett Medical College	(1915)	72 5
Medical College of Virginia	(1915)	78 6 78 7

Miscellany

America and the World's Supply of Cinchona Bark

That the cinchona tree is indigenous to South America is well known It is not so well known that within the lifetime of persons yet living the American continent has ceased to be a considerable factor in the world's supply of cinchona This fact is brought home to us today by the present high price of quinin (editorial, The Journal, Dec 4, 1915, p 2010)

There are many species of cinchona, a number of which yield varying amounts of alkaloids, while others are of little or no value. Commercial cinchona bark today, however, consists chiefly of red cinchona, yielded by *Cinchona succirubra,* and yellow cinchona or Calisaya bark, yielded by *C calisaya* and *C ledgeriana* These two barks are described in the U S Pharmacopeia

All the species of cinchona are natives of the Andean regions of South America between latitude 19 south and 10 north They have never been found native elsewhere, though some parts of Mexico are said to be well adapted to their growth (Markam, C R Peruvian Bark) For a long time the bark was collected only from the region around Loxa or Loja, Ecuador, whence came the famous bark that cured the Countess of Chinchon Later, forests were discovered elsewhere and worked out with ruthless waste Prospectors, it seems, sought new cinchona regions as they would have searched for gold, and having found a forest, exhausted it without thought for the morrow The *cascarilleros* (bark collectors) gathered the bark either by stripping the tree as it stood, or by felling it and then stripping it, new trees were never planted to take the place of those destroyed In 1735, Ulloa reported to the Spanish government that these wasteful practices would undoubtedly exterminate the forests about Loja in time. He suggested that the Corregidor of Loja should appoint an overseer of the forests whose duty it should be to see that a cinchona tree was planted in place of each one cut down This salutary rule, however, was not enforced, and sixty years later Humboldt reported that 25 000 trees were felled in a single year Sir Clements Markham, who saw the forests in the middle of the last century, believed that they were not likely to become actually exterminated unless the method of stripping the standing tree was followed exclusively This left the tree to be destroyed by rot and insects If it were felled very near the ground, sprouts would be sent up to take its place The more probable danger, Markham thought, was that of periods of scarcity during the time while young forests were growing up Nevertheless, Wellcome ('The Cinchona Forests of South America,' *Popular Science Monthly*, August 1880, p 507), who visited the cinchona regions after Markham's time (in 1879), was very pessimistic as to their future It is said that when the South American countries, especially Bolivia, desired to undertake the cultivation of cinchona, they sent abroad to secure seeds from the foreign plantations that were by that time flourishing (National Standard Dispensatory, article on cinchona, p 448)

It seems probable that the high prices of quinin during the Civil War were due largely to actual scarcity of cinchona bark, and possibly in some degree to interference by the South American governments with the bark export trade At all events the world would probably have been suffering long since from a quinin famine if it had not been for the cultivation of cinchona outside of South America Various men of different nationalities had suggested or attempted its domestication but the achievement was difficult, for, apart from the natural obstacles in the way, the jealous South Americans hindered the exportation of seeds and plants as much as possible The thrifty Dutch, though not actually the first to attempt the transportation of specimens, were apparently the first to succeed in taking them safely to the Old World In 1853 the Dutch government commissioned the botanist Hasskarl to collect cinchona plants and seeds for use in starting plantations in Java In 1866 the Dutch obtained from Charles Ledger, an Englishman long resident in South America, half of his collection of seeds of the valuable species since called after him *Cinchona ledgeriana* Collections for the cinchona plantations in India were made by Clements Markham in 1860, while half of Ledger's collection was purchased in 1866 by an Indian planter Both in India and in Java the cultivation of cinchona has proved a success, and the richness of the bark in alkaloids has been increased under cultivation and by selection of stock The U S pharmacopeial requirement is for not less than 5 per cent of total alkaloids, but good bark may yield a much higher percentage The effort of growers in late years has been to raise the quinin content rather than that of total alkaloids (Dispensatory of the U S A., article on cinchona rubra, p 344)

India is said to consume all or practically all the cinchona raised in that country (Roeder, George Tropenpflanzen, 1909, xiii, 473, quoted in Digest of Comments on the Pharmacopeia) The bulk of the world's supply of cinchona now appears to come from Java (Kraemer, Henry Scientific and Applied Pharmacognosy, 1915, p 738), though a comparatively small amount is still imported from South America, and some is now produced in Ceylon and Africa The South American plantations are said to have proved unsuccessful commercially, largely because the expense of transportation (on the backs of men over the mountains) makes competition with eastern cinchona impossible (National Standard Dispensatory, article on cinchona, p 448) The cinchona planter of Java inclines to take advantage of the market, which he now practically controls, and the rise in the price of quinin, which, as mentioned earlier, began before the present war, may be due in some degree to this circumstance

An Examination of Prisoners at Joliet Penitentiary

A preliminary report of a psychologic and psychiatric study of prisoners at Joliet Penitentiary, made by Drs H Douglas Singer and George Ordahl, appears in the *Institution Quarterly* Under present conditions, all convicts at the penitentiary are treated alike and associate with each other at haphazard It was realized that if the institution were to fulfil its true purpose, that of protecting society those persons capable of improvement should be singled out, kept segregated from the hopelessly antisocial convicts, and educated for a return to normal social life. While this purpose cannot be completely realized without universal application of the indeterminate sentence it was felt that something could be accomplished under the present system

It was impossible, in the time available, to examine all of the inmates of the penitentiary Fifty male prisoners were therefore chosen, in a manner intended to secure four representations of different types for study by Drs Singer and Ordahl. Fifty-one of the fifty-two female prisoners were studied by Mrs George Ordahl

The actual ages of the male prisoners ranged from 16 to 74, the average was 30 The mental ages by the Binet-Simon tests ranged from 6 to 16, the average mental age of the entire number was 11 2 Only seventeen prisoners tested above 12 years, fourteen were found to be feebleminded (below 10 years) The actual ages of the female prisoners ranged from 19 to 60, the average was 34 The mental ages by the Binet-Simon test ranged from 7 to 15, the average was 11 8 Fifteen of the female prisoners responded to the tests above the age of 12, five were feebleminded, or below 10 years

The investigators also grouped the prisoners in accordance with their fitness to become members of society as (1) criminals by accident, of adult and subnormal intelligence, (2) borderline cases, (3) antisocial persons, of adult or subnormal intelligence and (4) insane persons 1 The group of criminals by accident (those capable, if normal in intelligence of being educated for return to a useful and self-supporting life in society) included 16 normally intelligent and 15 feebleminded males, and 16 normally intelligent and 5 feebleminded females 2 The borderline group (persons apparently capable of improvement in spite of the presence of certain ominous traits) consisted of 6 males and 27 females 3 The group of persons regarded as absolutely unfit by Nature for life in society or commingling with the more hopeful prisoners included 13 males and 1 female 4 While the insane group is necessarily small, one case was studied in which crime was judged to be the result of definite delusions still present and active after detention for one year

The report emphasizes certain points which require remedy 1 The information concerning convicts available for the use of the board of pardons is so scanty and unsatisfactory that some prisoners are released when entirely unready for freedom and thus are given an opportunity to committe fresh crime, while other prisoners deserving of probation and liable to be harmed by prison conditions are detained 2 The selection of occupation for convicts seems to be based more on the needs of the prison departments than on the requirements of the individual to be trained 3 Recidivism, while most frequent among antisocial persons, is not limited to them It is especially emphasized that antisocial persons should be recognized, segregated to prevent their influence on persons capable of improvement, and, if their sentence permits of their detention, should not be permitted to leave

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Book Notices

Principles of General Physiology By William Maddock Bayliss, M A, D Sc, F R.S, Professor of General Physiology in University College, London Cloth Price, $6 net Pp 850, with 259 illustrations New York Longmans, Green & Co, 1915

According to the author, this book is not an applied physiology, but rather an abstract physiology, presenting facts not found except in original papers or monographs, many of them not biologic, the knowledge of which is of fundamental importance in understanding the mechanism of living protoplasm

The book is both general and elementary, in that it discusses the importance of the following phenomena in an elementary and general way, each of the subjects given comprising a chapter in the book protoplasm, energetics, surface action, colloidal state, permeability of membranes and the properties of the surface of cells, osmotic pressure, electrolytes and their action, water, its properties and functions, catalysis and enzymes, oxidation and reduction, tonus, electrical changes in tissues, excitation and inhibition, contractile tissues, receptor organs and action of light This type of subject-matter receives only scant treatment or passing reference in most books The remaining chapters deal with subjects more commonly and extensively treated in the usual texts, such as nutrition, secretion, digestion, reflex action, nervous system, peripheral and central, respiration and the circulation of the blood The book ends with a chapter on hormones, drugs and toxins in which small, entirely inadequate paragraph references are made to the highly important glands of internal secretion Each chapter ends with a summary followed by references to important literature Besides the usual illustrations, there are scattered appropriately throughout the text portraits of the men whose striking discoveries have been of such fundamental importance in advancing physiology and its allied sciences, as Claude Bernard, Descartes, Emil Fischer, Graham, van't Hoff, Leeuwenhoek, Priestley, Ludwig, Ostwald, Ehrlich, Lavoisier, Pfeffer, Helmholtz, Pawlow and Harvey This feature will please all who love the biologic sciences and who, therefore, take a personal interest in the men associated with their history and development

The book might be recommended most highly for no other reason than that there is no book in the English language which contains a similar extensive and scholarly discussion of those processes, mentioned by title above, references to which are being made more and more at the present day, because their combined manifestation in a physical and chemical system constitutes, perhaps, life and living phenomena Should the text appear at times to be a loose compilation of data, every biologist will, nevertheless, be grateful to the author for the facts and the splendid bibliography made instantly accessible to him for his own further study and particular problems The aim of the book was high and the task was difficult, the result is so gratifying that any deficiencies appear negligible when the work is viewed as a whole

Diseases of the Nose and Throat By Algernon Coolidge, A B, M D, Professor of Laryngology in Harvard Medical School Cloth Price $1 50 net Pp 360, with illustrations Philadelphia W B Saunders Company, 1915

This is a small volume into which the author has attempted to compress the established facts and authenticated theories regarding the methods of examination, and the anatomy and physiology, of the nose, external and internal, and the pharynx and larynx, together with the etiology, pathology symptoms, signs, diagnosis and treatment of the long list of diseases to which these parts are liable He also includes chapters on diseases of the mouth and tongue, on diphther a, scarlet fever, measles, etc, and on bronchoscopy and esophagoscopy He appears to have attempted a little too much for the space occupied The book is intended as a manual for students and practitioners, and its brevity is one of its chief virtues As the author remarks, there are many things that can be learned only by clinical experience, but also much that is overlooked if this practical work is not accompanied by a reasonable amount of didactic study On this ground the book is of special value for undergraduates, because they have so little time in which to master the enormous volume of medical science with which they are expected to be familiar when turned out as full-fledged practitioners It would be much better if, aside from the fundamental sciences, the whole subject of medicine were taught from brief textbooks which should contain the essential facts This method should be combined with personal education of all the senses, and didactic and clinical instruction by competent teachers On this account we can specially commend this work to undergraduates, for it contains as much information on these subjects as they will be able to grasp and assimilate

Chemical Constitution and Physiological Action By Prof Dr Leopold Spiegel Translated with Additions from the German by C Luedeking, Ph D, and A C Boylston, A M Cloth Price, $1 25 net Pp 155 New York D Van Nostrand Company, 1915

Those who do not yet appreciate that our knowledge of the effects of chemical agents on animal organisms is no longer as it was primitively, largely a matter of mere haphazard discovery, will find in this little volume much fascinating instruction Our knowledge, not only of the influence of the nucleus of structure of an organic compound on its physiologic action, but also of the influence of constitution, that is, the nature and number of the constituent radicals and the grouping of these radicals, is increasing There is also a collection of data which furnishes us with an insight into the relation between the physiologic action of an inorganic compound and its component ions This knowledge, considered in connection with what is known about the composition and dynamics of cell substance and also, at times, in connection with certain physicochemical phenomena, enables us to predict with fair assurance the pharmacologic action of many compounds of which we know the structure From this account of the subject-matter of this work, it may readily be surmised that such knowledge has been utilized by experimental therapeutists and seized on by inventors of chemical therapeutic agents, but it also seems obvious that, before therapy can have become thoroughly rationalized, such knowledge must also become a part of the equipment of a prescribing physician While a treatise on this phase of medical science is hardly a novelty, this volume is welcomed, because the scope and manner of treatment of the subject-matter makes it of especial service as an introduction to the subject for those who have not yet become conversant with it, or for those whose acquaintance with it is not comprehensive It is all easily intelligible to any one with the average present day medical student's knowledge of chemistry

Medicolegal

Convenant Against Use of Property for "Business" Not Violated by Physicians

(Iselin et al vs Flynn (N Y), 154 N Y Supp 135)

The Supreme Court of New York, Special Term, New York County, says that when certain lots were sold each deed contained a covenant that whenever the lot should be built on there should be erected a first-class dwelling house of specified materials and dimensions, and that there should not be established or carried on certain enumerated uses, "or any kind of manufactory, trade or business whatsoever, and that the building and buildings erected on said lots shall be restricted to private dwellings" A number of physicians eminent in their profession took up residence in the street, and it was claimed that they in fact conducted business which had consequential effects on the neighborhood But it was not necessary to enter on an ethical discussion of the difference between a livelihood gained by the practice of a profession and that by a business vocation The law is practical It is not concerned with abstractions, but with the actual affairs of men, and it recognizes the distinction between the practice of a profession and the conduct of a mercantile business One is purely personal, depending on the skill or art of the individual The other may consist in ability to organize and manage a shop or exchange where commodities are bought or sold Neither the spirit nor the letter of the restrictive covenant in this case intended or expressed prohibition of the practice of a profession, nor can sophistry pervert the real intent and plain meaning of the word "business" to include "profession"

Osteopaths Not Authorized to Practice Medicine

(State vs Dodd (Mont), 149 Pac R 481)

The Supreme Court of Montana affirms an order denying the defendant a new trial after his conviction of practicing medicine without having first obtained a certificate from the State Board of Medical Examiners The court says that the principal contention made was that the statute regulating the practice of medicine in Montana is unconstitutional Section 1591 provides that every person practicing medicine or surgery without such certificate shall be guilty of a misdemeanor, defines 'practicing medicine or surgery," and contains this proviso "Nothing in this section shall be construed to restrain or restrict any legally licensed osteopath practitioner under the laws of this state" It was insisted that the effect of this section, with the proviso quoted, is to deny to every person, except osteopaths, the right to practice medicine or surgery in Montana without a certificate from the State Board of Medical Examiners, and that in excepting licensed osteopaths from the operation of its provisions, those persons thus favored are free to engage in the practice of medicine or surgery without having to submit to the ordeal of an examination and without having the certificate required of every other one who seeks to engage in the like practice. But, in assuming that Section 1591 permits an osteopath to practice medicine without a certificate from the State Board of Medical Examiners, counsel for the defendant erred, and with the fall of this, his fundamental premise, went his entire argument. When the proviso was inserted in what is now Section 1591, the legislature understood that the practice of osteopathy (a) did not comprehend the practice of medicine or surgery, and (b) that it was already regulated and controlled by appropriate statutes enacted pursuant to the police power of the state The only effect, then, of this legislation, has been to classify all those engaged in the healing art into two classes (1) Physicians and surgeons, or those engaged in the practice of medicine or surgery, and (2) osteopaths, or those devoted to the practice by osteopathy In the absence of anything appearing to the contrary on the face of the statute, the classification made by the legislature will be presumed reasonable. Nor was there any suggestion in this case that such a classification as was undertaken above is unreasonable The proviso in Section 1591 is a harmless piece of legislation It did not affect the status of osteopathic practitioners in the least They were confined thereafter, as theretofore, to the practice of osteopathy and forbidden to practice medicine or surgery without the certificate from the State Board of Medical Examiners required of every one who seeks to engage in such practice Neither has the legislature, by enacting Section 1605 of the Revised Statutes, recognized osteopathy as including, or included within, the practice of medicine That section does not authorize an osteopath to "treat, cure, alleviate any disease of the mind or body by any treatment," as counsel for the defendant contended in his brief The language of the section cannot be tortured to convey such meaning Within the entire scope of his practice, the osteopath is confined to treatment by the use of the hands or mechanical appliances

Liability of Relatives for Medical Services and Hospital Care

(Tryon vs Town of Moyer et al (Minn), 153 N W R 307)

The Supreme Court of Minnesota reverses orders sustaining the demurrers of Defendant Ernest Dornfeld to the complaint of the plaintiff in this case and to the complaint of the Benson Hospital Association in a case decided with this one The court says that this was an action for the reasonable value of medical and surgical services rendered by the plaintiff to one Rosie Dornfeld, a granddaughter of Ernest Dornfeld, and the other case was for services and care rendered to her by the association in its hospital It was stated that Rosie Dornfeld had been seriously injured, and that she and her parents were public charges on the town of Moyer, but that her grandfather was able, financially, to respond for the expenses of her care and attendance, but refused to pay therefor The question presented by the record was whether one who has furnished to a dependent relative medical care and treatment or hospital care and services in an emergency case, where there is an urgent requirement for both physician's services and hospital care, imperative and admitting of no delay, can recover from a relative, on whom rests the statutory duty to support such dependent relative, compensation for the reasonable value of such services, even though such services were rendered without the knowledge of the relative sought to be charged The court holds that he may The Minnesota statute provides that every poor person who for any reason is unable to earn a livelihood, shall be supported by his children, parents, brothers and sisters, grandchildren or grandparents, and relatives having sufficient ability shall be called on for such support in the order above named, etc The duty is created by the statute, and does not depend on contract It is a duty which devolves primarily on the relatives, it cannot be evaded or shifted on others Cases may arise in which notice to the relative may be required, but the court was not dealing with such a case. It sufficiently appeared from the complaint that Rosie Dornfeld was very seriously injured, that she required the promptest attention, that it was imperatively necessary to operate immediately in order to save the child's life It appeared that everything was done for the child that could have been done by Defendant Dornfeld himself, and that the services rendered were reasonably proper and necessary Under these circumstances, it could not be successfully contended that the duty rested on the plaintiffs to give notice to the defendant Dornfeld before doing that which it was imperatively necessary should be done in order to save the child's life There was a legal duty on the part of the Defendant Dornfeld to support and care for his granddaughter An emergency arose The necessity for medical, surgical and hospital services was immediate, urgent and imperative The plaintiffs having performed the services it followed that the defendant Dornfeld was primarily liable to pay for the reasonable value of such services, at least until such time as he himself could act in the premises The complaint in both cases stated a cause of action against the defendant Dornfeld

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Chicago, Dec. 27 29
American Physiological Society, Boston, Dec 27 30
Society of American Bacteriologists, Urbana, Ill, Dec. 28 30
Western Surgical Association, Des Moines, Iowa, Dec. 17 18

PHILADELPHIA PEDIATRIC SOCIETY, SECTION ON PEDIATRICS OF THE NEW YORK ACADEMY OF MEDICINE, AND THE NEW ENGLAND PEDIATRIC SOCIETY

Joint Meeting, held at Philadelphia, Nov 9, 1915

Dr William N Bradley, Philadelphia, in the Chair

Lobar Pneumonia The Correlation of Its Symptoms and Physical Signs with the Findings of the Roentgen Ray

Dr Howard H Mason, New York During the past two years, at least one roentgenogram has been taken in each case of lobar pneumonia on the children's service at the Presbyterian Hospital In those cases showing a shadow, but in which bronchial voice and breathing were not heard, roentgenograms were made at varying intervals The purpose of these examinations was to ascertain whether or not the consolidation as evidenced by this shadow passes through any regular development, and if so, whether the different stages of its progress can be correlated with the development of certain physical signs Thirty-seven cases of lobar pneumonia were studied Each case showed a definite shadow The shadow was always so placed that it touched the pleura at some point. The early shadows were triangular, with their bases on the pleura and their apices separated from the region of the root by normal lung In their later development the shadows extended in size and became uniform from the periphery to the root of the lung When the shadow involved this entire stretch, bronchial voice and breathing were present, but not otherwise It is believed that the inference is justified that the dimensions of the shadows correspond to the extension of consolidation

Tuberculosis in Infancy

Dr Charles Hunter Dunn, Boston The importance of tuberculosis as a cause of death in the first two years of life is shown by the fact that in a series of sixty-two successive necropsies, tuberculosis was found in twenty-five, was considered the direct cause in twenty-three cases and the contributing cause in the other two Extremely divergent views are held concerning the source of infection and its portal of entry into the body One set of writers believes that milk infected with the bovine type of bacillus is the most common cause of the disease in infancy, and the intestinal tract or the tonsils the most common portal of entry Other writers believe the human type of bacillus to be the most common cause, and the lungs the portal of entry The two most important forms of evidence bearing on this question are (1) that derived from bacteriologic study of bacilli obtained from infants by culture or animal inoculation, and (2) that derived from a careful study of the lesions found postmortem Postmortem findings show a greater frequency of involvement of the peribronchial and mediastinal lymph nodes than of the mesenteric Advocates of milk infection try to explain this on the theory that the bovine bacillus can pass through the intestinal mucous membrane and through the mesenteric lymph nodes without causing a lesion, locating in the lymph nodes of the chest as the point of minimum resistance This theory I believe to be untenable. The contradictory evidence on the source of infection and portal of entry can be explained only on the ground of a variation according to locality Such variation is probably largely dependent on the character of milk supplies and the frequency of tuberculous disease in cattle in various parts of the world I believe that infants can be infected either with human bacilli, usually entering through the lungs, or with bovine bacilli, usually entering through the intestine The most generally accepted view is that tuberculous infection shows the primary lesion in the lymph nodes In my studies at the Infants' Hospital, a primary incision was actually found at the portal of entry in twenty-two of the twenty-five postmortems I have inclined, therefore, to believe Ghon that it is more probable that when a primary lesion is not found at the portal of entry it is overlooked The primary lesion was found in the lung in twenty cases, and in the intestine in two Adding to the twenty cases, the three in which the only chronic lesions were found in bronchial lymph nodes, we have a ratio of twenty-three cases of infection through the lung to two cases of infection through the intestine Tuberculous ulceration of the intestinal mucous membrane was found in seven cases besides the two in which the lesion was considered primary I believe it to be a probable conclusion that these tuberculous ulcerations of the intestines are secondary to swallowed tuberculous material coughed up from the softening of the primary lesion These seven cases with secondary tuberculous ulceration of the intestine were identical with the seven cases in which the mesenteric lymph nodes were involved in addition to the bronchial lymph nodes I believe my findings to be against the view of the ability of the tubercle bacillus to pass through the intestinal mucosa without leaving traces of its progress in the form of a definite lesion In the series the diagnosis of tuberculosis was made in twenty-three out of twenty-five cases, but these were all seen in the last stages of the disease Three important points besides tuberculous meningitis or tuberculous peritonitis on which the diagnosis of tuberculosis in infancy is based are (1) physical signs suggesting tuberculosis in the chest, (2) tuberculin reaction, and (3) Roentgen-ray examination of the chest.

MEDICAL SOCIETY OF VIRGINIA

Annual Meeting, held at Richmond, Oct 26-29, 1915

Custodial Care of the Feebleminded

Dr L T Royster, Norfolk "Responsibility" is a relative term, it depends on the mental rather than on the chronologic age. A liberal percentage of these classes are not responsible A method has been found to test them, this is the Binet test. They have a lowered resistance to immoral influences Physical causes may be back of it hookworm, etc A large percentage of prostitutes are not over 12 years of age mentally Two per cent. of schoolchildren really belong in the feebleminded class Defectives almost always breed true There are three main lines on which to work (1) prevention of propagation, (2) state control to care for the defectives, (3) relief of indigent parents We must detect this early to apply treatment

Diagnostic Value of Psychanalysis in Nervous Diseases

Dr J Allison Hodges, Richmond Diagnosis by dreams is of interest to doctors if there is any truth in it Dreams are stories of wishes Mental life is conscious and subconscious or unconscious The difficulty is in the interpretation, many interpretations are farcical For the average physician it is impracticable How much of the benefit is due to suggestion from the doctor? If we spend more time getting into the inner thoughts of the patient, we shall not have to rely on dreams

DISCUSSION

Dr A. L Tynes, Staunton We have been laying too much stress on the pathology of anatomy, we should put more on the pathology of physiology I do not believe that the analysis of dreams is necessary to accurate results Careful history taking is very important In the more complex neuroses we are treading on dangerous ground, we should refer these patients to the neurologist

Dr. Tom A Williams, Washington, D C. We should attack the underlying cause, not the hysterical paralysis, for example Relieving this does not cure the patient, the causremains Psychanalysis is as old as philosophy, it means determining the trend of the patient's thoughts

DISEASES OF THE BILIARY TRACT

Etiology and Pathology

Dr. S B Moon, Richmond One attack predisposes to another It becomes a habit The germs enter through the mucosa and set up a focal necrosis Most of the common bacteria of suppuration are concerned, the colon bacteria is perhaps the most frequent. The bile is altered in character Gallstones are infrequently formed anywhere except in the gallbladder Their formation is slow, occupying from two to five months Cholesterin is always present, and may be the sole ingredient Crystalloid and colloid substances are always in the bile, a disturbance of equilibrium between these two results in precipitation of one or the other Enzymes may be the disturbing factor set free in the bile Streptococci are not concerned in gallstones Gallstones are a fruitful cause of cancer of the gallbladder

Symptoms and Diagnosis

Dr. Hugh H Trout, Roanoke The past history should be studied carefully History of previous attacks assists In our series of 196 cases they were most frequent between 30 and 40 years, the youngest patient was 4 and the oldest 76 The most constant symptom was indigestion which occurred in 112 cases It is fortunate that most diseases that produce pain in this region are surgical, a dull aching at first. Pain radiating to the right shoulder in our series was of little value Sharp pain of short duration, from two to five hours, but dull ache persists Spasm of the right rectus muscle persists only during the acute attack Elevation of temperature was most uncertain Blood count was of great value, in diagnosis and prognosis Agglutination time should always be noted. Waiting for jaundice is most uncertain

Medical Treatment

Dr. Hugh McGuire, Alexandria At first food should be limited to milk and cereal, and alcohol prohibited. The patient has a repugnance to fats Proper laxatives are most important, and drastic purgatives only still further irritate the mucous membrane Broken doses of calomel should be tried Zinc oxid starch and camphor are useful In gastric catarrh lavage should be used Treatment for relief of acute symptoms must be used before the exact condition can be found out. The suppurative form is amenable only to surgery In the prophylaxis of cholecystitis, hexamethylenamin should be administered throughout typhoid Olive oil is of no benefit Hot compresses should be used, and the patient starved for the first twenty-four hours

Surgical Treatment

Dr. Lomax Gwathmey, Norfolk I am glad to see that surgeons and medical men are close together on this question If the case is seen early, operate, if the inflammation is waning, wait

Discussion on Diseases of the Biliary Tract

Dr. Hugh Taylor, Richmond One type of bile tract infection is an attenuated infection The ampulla opens on the mucous membrane of the duodenum by so small an opening that we can scarcely see it, yet it drains a big tract The key to the situation is not the removal of the stones, but the drainage of this vast tract.

One Hundred Cases of Heart Disease in the Negro

Dr. Charles R Grandy, Norfolk I was struck with the relative infrequency of rheumatism as a cause in the aortic cases and the large proportion of aortic cases, 56 as against 36 per cent. of mitral cases Only five aortic cases had rheumatism as the cause. Hard work on the docks is an infrequent cause of heart disease the natural cardiac strength of the negro enabling him to continue work at very hard labor A preacher, aged 65, had a systolic blood pressure of 280, with diastolic of 180 and not symptoms enough to make him return to the dispensary One negro with a pressure of 210 still pushes a truck on the docks Normal blood pressure in adults is from 110 to 140, without regard to age, I have found persons over 80 with a pressure of 130 I would not make a diagnosis of aortic regurgitation without a high pulse pressure

DISCUSSION

Dr Douglas Vanderhoof, Richmond Rheumatic or streptococcic cases are extremely amenable to treatment if seen early Removal of the tonsils must always be considered in these cases

Dr J W Preston, Roanoke The polygraph and the Wassermann test are of great value in the study of heart cases The heart carries the load till it cannot any longer, then we get an arrhythmia We know that as long as the heart is doing well it is better not to try to bring down the blood pressure We can save a patient's life often, by treatment when failure begins

Dr. P S Roy Washington, D C I would call attention to some points in diagnosis If the patient has great shortness of breath spits blood, and has a red face, we feel that we have a mitral lesion These patients do not often spit blood in the aortic cases, and have dyspnea late if at all If they have regular beat, and over 120, we know the remedy is digitalis, if it does not respond to 40 drops, results will be obtained from 80 drops The blood pressure before and after exercise should be taken If the heart is doing well, it should go up 10 or 15 points, if the heart is not doing well, it will go down Dropsy or enlargement of the liver, hydrothorax etc., is more liable to occur in mitral than in aortic disease

Dr. A L Tynes, Staunton Fibrillation of pulse is a symptom of grave prognostic significance McKensie reports a series of cases, but not as large as White's He found that not a single patient in whom this was observed was living after two years

Dr W E. Anderson, Farmville We are attaching too much importance to blood pressure measurement. The heart stands as much use as any organ, and I think as much abuse as well

Dr. P S Roy Without the presence of extrasystole, the alternating pulse is the last cry of a dying heart

Posthospital Treatment

Dr. Stuart McGuire Richmond The surgical operation never cures a patient, it only puts him in the way to get well It often takes months and even years for the patient to get back to his normal The question at once presents itself whether the surgeon or the family doctor should be responsible for him during this time The best results are obtained by intelligent cooperation between the patient the family doctor and the surgeon The patient is sometimes so impressed by the hospital regimen that he is inclined to look back to the surgeon rather than forward to the physician Questions as to clothing, diet, whether or not to wear corsets, abdominal binders, baths, douches, the resumption of sexual relations etc tax the physician's knowledge and common sense In the first place, all the facts of the operation and the subsequent convalescence should be written to the physician by the surgeon I put the directions in writing so as not to tax the intelligence or understanding of the patient Ten or twelve forms may be kept on hand that will cover most cases in which operations are performed in the general hospital, and revised for occasional cases One or more of these forms should be sent to the physician for the patient's instruction.

Mucous Colitis

Dr. John W Preston, Roanoke There are two erroneous impressions about this malady that it is rare, and that the treatment is rebellious As to frequency two thirds of all young adults are afflicted some time. Twenty-three patients with it have been under my care in the last five years The sympathetic and the vagus constitute the autonomic nervous system The vagus produces a spasmodic action in the intestine, and the sympathetic the reverse. This gives an idea of the value of belladonna and epinephrin

THE STATE VERSUS TUBERCULOSIS

Dispensaries in the Fight Against Tuberculosis

Dr Louis Hamman, Baltimore It is impossible for me to contemplate a method of combating tuberculosis that does not give a prominent place to the dispensary The first task of the dispensary is getting patients, but this is the easiest The nurse is most important in getting the confidence of families They must have more considerate treatment than in the usual dispensary The second important thing is early diagnosis Early cases must be recognized Experience is necessary to reach success Third is the plan of treatment The importance of this is great to the patient I do not feel that it is the function of the dispensary to treat great numbers The nurse is just as important in giving instruction as is the doctor So many things follow tuberculosis that a social service department is always necessary to solve the economic difficulties If the staff is large enough it may make clinical study of the cases presented, and so the dispensary may serve as a center where new facts may be ascertained The schools are deficient in the instruction about the treatment and diagnosis of tuberculosis We have eighteen municipal nurses in Baltimore.

The Visiting Nurse in the Fight Against Tuberculosis

Dr David R. Lyman, Gaylord Farm Sanatorium, Conn If I were restricted to any one of the four agencies in treating tuberculosis, namely, sanatoriums, dispensaries, advanced hospitals and the visiting nurse, I would unhesitatingly take the visiting nurse, because the others would follow as the night the day All four are needed New York nurses have found an average of five cases for every one registered The nurse gets to know the people, and if she is visiting one family she is very likely to hear it if another family on that street has some one with a chronic cough In ten years, 1,122 discharged patients earned $1,339,000 I find that patients do better at their old occupations and do better indoors than out In common with other states, with your nurseries, your laundries and your kitchens in the hands of a race whose death rate from tuberculosis is treble your own, where should your campaign logically begin?

Discussion on the State Versus Tuberculosis

Dr Stephen Harnsberger, Catletts Tuberculosis is found largely among the poor, and the wage earners So it should be largely a state or a governmental matter Environment is of primary concern in the fight against tuberculosis Eradication is largely a matter of abolishing poverty

Dr. John J Lloyd, Catawba Sanatorium, Va We have a sanatorium of 168 beds which I believe will be sufficient to care for the incipient cases for several years to come, and $192,000 earned by discharged patients is a good percentage on the amount invested by the state Too many come with the idea that they will be well in one, two or three months The patient is too apt to think that if he visits the doctor once a week, he can do as he pleases the rest of the time The nurse who has had tuberculosis makes the best nurse The negro problem is the biggest and the hardest one to handle

Dr. W A Plecker, Richmond The worst—the number of deaths from this disease—has not been told They are erroneously reported The colored people realize that it is not a good thing to have it known that they have tuberculosis I think probably there were 4,000 deaths If in our power, we are going to make the death rate from tuberculosis *seem* higher by getting more accurate figures

Dr. P S Schenck, Norfolk We listen to these addresses by specialists, and we are filled with enthusiasm, we go home, and we do nothing We should go at fundamentals, namely, money and authority—authority to take the tuberculous patient out of his family, and place him where he would no longer be a menace There are only five states in which the death rate from tuberculosis is higher than in Virginia

Dr R W Brown, Roanoke I have been impressed with the fact that while early diagnosis is important, yet the majority of patients who come to me as preliminary examiner for Catawba Sanatorium are too far advanced to enter the sanatorium I have lost some of the best patients in my clientele by making a diagnosis of early tuberculosis Another fact is that we must have some place where the advanced patients can get treatment.

National Board of Examiners

Dr. L A LaGarde, Washington, D C I am here tonight at the bidding of Dr Gorgas, in a matter in which he is much interested Everything is tending toward military preparedness, these days, so that if a crisis comes we shall not break down as we did in the medical department in 1898 The army has no difficulty in getting anything it asks of Congress at present, but what we are asking for now Congress cannot give We want men to assist us in time of war We want to prepare the medical men before the crisis In foreign countries now there is not a medical man who is not in some way or other connected with the army medical corps The 0 7 per cent which we have is not a drop in the bucket if a crisis should arise We have among other organizations the Red Cross We have of course also the National Guard Medical Corps But that would not be enough We formed the Medical Reserve Corps some time ago, but it is not yet to our satisfaction. Dr Rodman is the father of a movement to establish a central board for examination of physicians, so that they may practice their profession in any state, territory or possession of the United States Dr Gorgas says he will take the licentiate of this board without further examination. We can give training through summer camps and through correspondence Many associations have adopted resolutions favoring cooperation in this matter (Note A resolution favorable to this was passed)

Sanatoriums in the Fight Against Tuberculosis

Dr. Lawrason Brown, Saranac Lake N Y In the early eighties, the sanatorium idea reached America, Trudeau and Bowditch founded the institutions Today we know that some patients pass through no incipient stage but leap from the doubtful to the advanced stage I believe that tuberculosis is curable, but I hold that permanent arrest is the most frequent termination in the majority The remainder of the life of the sanatorium patient must be a "sanatorium extension course" He must apply and change the knowledge until knowledge is replaced by wisdom which is assimilated knowledge The sanatorium must be given credit for starting the crusade Later the public began to demand that an early diagnosis be made A great factor in enlightenment is the influence of patients who have been educated at sanatoriums Hard work, questionable food and rest at night in a room that cannot be ventilated means defeat for many Every worker has heard of the "unteachable consumptive" He struggles to support his family and grows worse, bitterness comes and carelessness, the tubercle bacillus is planted in his children, here the "night sanatorium" may be the means of saving Thirteen states have passed laws authorizing the erection of county tuberculosis hospitals

Control of the Poor Consumptive

Dr. Charles L Minor, Asheville, N C I speak of the poorer class of workmen and workwomen, and of our hosts of negroes whose dirtiness and ignorance is rivaled by our foreign immigrants, their tenements characterized by dirt, darkness, dampness and lack of fresh air, the dirty children playing on the dirtier floor on which the sick members expectorate indiscriminately Do you think you or your children could stay well under such conditions, forced to eat the horribly cooked food the tired, ignorant, overworked wife prepares? Could you educate your children into healthy and useful citizens in such surroundings—sickness, no hygiene, poor food, bad examples and bad companions all around them? Leave this poor man where he is and he will surely die, but he will also drag down his family and often his neighbors, remove him to a place where he can get proper care till he dies, disinfect his tenement, watch over his children, and you will nip in the bud a focus of infection whose evil possibilities are hard to overestimate You are forced to the only satisfactory solution of this problem, to give your health department police power to remove him from his home, and place him in a specially constructed hospital Here rendered harmless to his friends and his community by skilful care and thorough sputum disposal, visited at intervals by his family, he can pass his last days in comfort, no longer a menace. Liberty is conditioned on its not bringing harm to other citizens When our legislators recognize the importance of this, they will evolve laws to meet the situation If 3,500 Virginians die yearly from tuberculosis, each furnishing a focus of infection, the number is certainly large enough to justify the expense I would say most emphatically that it is utterly impossible to care for these poor invalids in their homes Those who know the habits of our poor, and especially of our negro poor, will have no illusions on the subject The buildings may be inexpensive, the administration must be moderate

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NATIONAL ASSOCIATION FOR THE STUDY OF PELLAGRA

Third Triennial Meeting held at Columbia S C Oct 21 22 1915

(Concluded from page 2117)

The Etiology of Pellagra, with Especial Consideration of the Phenomena of Sensitization to Maize and Sugar Cane Products

Dr. Roy Blosser, Atlanta Ga. I do not blame granulated sugar or carbohydrates as a class with having anything to do with the production of pellagra I claim that certain products of sugar cane contain an active poison and that all that is necessary for the development of the disease is consumption of a sufficient quantity of these poisons I no more believe that the consumption of meat and proteins can prevent pellagra than that it can prevent the development of alcoholism in the regular drinker though the moderate consumption of proteins is advantageous in the treatment of pellagra My claims as to the production of pellagra by partially refined sugar cane are based on the effect of the experimental administration of these products to dogs, also to the results obtained in the treatment of from 100 to 150 cases of pellagra, seventy-two of which have been under observation more than a year with no relapses The treatment has been strict abstinence from cane sugar and maize products Pellagra is a disease of improper diet, it constantly presents marked gastro-intestinal symptoms which antedate by many months or years the condition recognized as pellagra Change in diet is admitted to be necessary in treatment. In some cases the extreme, not moderate, consumption of maize is the main factor in its production There is a close resemblance between the effect of sugar cane and alcohol, the difference being one of degree. Individuals consuming continually large quantities of sugar cane products become sensitized to them In advanced and chronic forms of pellagra sugar cane products cause burning of the tongue esophagus and stomach palpitation of the heart and nervousness Notwithstanding the unpleasant symptoms the habitue craves the stimulation of the sweets One who has become sensitized to maize will react to sugar cane and vice versa The reaction is more marked in warm weather than in cold Recent investigators have explained this reaction as a form of anaphylaxis

The Problem of Spoiled Corn

Mr. E. J Watson Commissioner of Agriculture, Columbia, S C. The Southern States have been made the great dumping ground for impure corn products Last year in South Carolina 108 out of 240 shipments of corn meal were made of spoiled corn unfit for a hog much less for human beings This corn was from other states Dangerous meal cannot be detected by inspection, as is shown by the samples exhibited Over 40 per cent. of the corn meal shipped into the state in 1914 was unfit for any purpose and it was either confiscated and destroyed, or when it was just above the minimum standard of safety we have permitted it to be shipped back. What effect meal from spoiled corn has had on the health conditions I do not know The spoiling of the corn is due to the miserable system of shocking corn in the fields The foundation of the whole trouble is the moisture which comes on account of the upturning of the ear in the shocks which allows the development of poisonous fungi Meal from spoiled corn is not the only injurious fungi

Etiology of Pellagra

Dr George C Mizell, Atlanta, Ga A working hypothesis of the etiology of pellagra which appears to harmonize all disputed points is this The one essential primary cause of pellagra is the consumption of excessive amounts of fat of the cottonseed oil group, and the storing of these oils, and their oxidation products in the body The condition which facilitates the storing of these fatty compounds we will term the secondary cause of pellagra The secondary cause is any systemic intoxication [After developing his hypothesis and giving his observations in a number of institutional and other cases, Dr Mizell reached the following conclusions] In every region in which pellagra exists, oils of the cottonseed oil group are consumed. Where these oils are excluded from the diet of the individual or the institution, pellagra ceases to exist. The cottonseed group of oils is the only common constituent of the food of pellagrins of this country, it is of undetermined wholesomeness, and it is the only food that corresponds to the incidence of pellagra in the United States The common constituent of these oils which differs from constituents of known wholesome oils is linolein, therefore it follows that linolein is the cause of pellagra. There are many conditions such as climate, local infectious diseases, constitutional diseases, conditions of skin, conditions of the gastro-intestinal tract and habits of individuals in selecting food each separately and collectively which play a part in the incidence and progress of the disease, but the essential cause is consumption of excessive quantities of linolein

DISCUSSION ON ETIOLOGY OF PELLAGRA

Dr H F Harris Atlanta, Ga The idea that oils are associated with pellagra is very old, like everything else connected with the subject There are really no actual facts as introduced that would go to show there is any truth in the idea In the southern part of the country, where pellagra does not exist, they eat olive oil, but it is in the northern part that it occurs They have practically no other food except maize It would seem to me the people who live largely on oils would suffer if there were any truth in this hypothesis, for example, the Eskimo and the people of southern Italy, who eat a great deal of oily substances One point in regard to the statement made by Commissioner Watson That rotten corn is harmless is a curious doctrine. It is well known that maize, in its early stage, becomes highly acid but at a later time the bacteria convert the albuminous portions until we get a product that is not poisonous

Dr. Mosby Durham, N C. Dr Mizell is advancing a very ingenious theory I have known it for some years and have never been able to accept it. There is one thing I would like him to explain on his theory We see a mother who has pellagra and she prepares the food for the rest of the family, and the rest of the family take pellagra If it is a boarding house keeper, we do not see so much of this pellagra. I am convinced that pellagra is an infectious disease

Dr. Adam Hayne, Columbia S C. The doctrine that spoiled maize is the cause of pellagra in South Carolina has been absolutely refuted on the floor here by the commissioner of agriculture. He stated that there was no spoiled corn raised in South Carolina, that none was allowed to come into the state, and that it was turned back. Yet the fact remains that there have been 1 083 deaths in this state from that disease since January 1 of this year Now, if we are going to tell the people of this state that it is due to corn and corn products, we are going to tell them something that we cannot prove by the facts

Dr. Roy Blosser, Atlanta, Ga Dr Mizell does not claim that corn does not cause pellagra I think he claims it does, and advances his theory as another cause Some Italians do not eat corn, but some of them do, and it is up to some one to explain what causes pellagra when they do not eat any maize, and when maize is not imported into the country

Dr. Cosby Swanson, Atlanta, Ga If cottonseed oil is the cause of pellagra, why is it that we do not *see more* cases of pellagra in persons between 12 and 18 years of age? In patients suffering from pellagra there is *less* fat deposited in the skin, the sweat and sebaceous glands are not so active, skin is usually dry and hard, because of their inactivity

George C Mizell, Atlanta, Ga There is not one fact statistics that does not substantiate this hypothesis Dr is said, "As an evidence that this theory is not true, in Italy and in France where much olive oil is used, pellagra does not occur" Olive *oil is a nondrying oil* Cottonseed oil is a drying oil The Eskimos do not have pellagra because they do not eat *this sort of oil*, but blubber oil, which is entirely different Dr Harris stated, in his bulletin, "It has been definitely shown beyond *any* doubt *that* there is a poisonous substance in cottonseed, and that it has nothing whatever to do *with the oil*" I have data to show that it has not been *proved*

Goldberger says, "Pellagra is due to something that re eating or are not eating" He says, "They are eating cheap class of food, cheap carbohydrates, meats and fats (sow belly)" You cannot produce one patient with pellagra who eats fat derived from sow belly alone, in connection with other cheap nonfatty foods

Dr Siler wanted to know why negroes in one locality have pellagra to a greater extent than in another The negress may cook for the white people in the city She feeds her family from the white people's table, they get the same products that the white people are eating Let the negro alone and he will buy sow belly and use the grease for cooking, thus excluding drying fats Again local conditions may be a secondary factor in different localities

Dr J F Siler, Washington, D C Why is it that in people between the ages of 20 and 45, so many more cases occur among women than among men, in white *people* particularly? We have a tremendous number of cases among the females

Dr. George C Mizell, Atlanta, Ga It is due to the fact that mothers and other women of this age have more unstable health, 65 per cent of my gastro-intestinal cases are in mothers who have gastro-intestinal autointoxication and female disturbances, which are often the secondary causes in pellagra

In regard to Dr Swanson's question, children between 12 and 18 do not often have pellagra because that is the period of adolescence During that period they have a much more active sebaceous secretion which enables them to take care of large amounts of incompletely oxidized fatty waste products The skin does not dry so easily

Etiology of Pellagra in Children A Study of Two Hundred Cases in Orphanages

Dr H W Rice, Columbia, S C Of 200 cases of pellagra in children in orphanages, 182 occurred in a local institution in four epidemics [Data are given with reference to corn, and other dietary considerations, together with statistics regarding age, sex, coincident disease, immunity, etc, and the study is summarized as follows] The facts in a large percentage of our cases of pellagra in this orphanage strongly discredit a causative relation of corn The incidence of pellagra is much higher in children under 12 years of age The discoverable differences in the diet of the smaller and larger children seem inadequate to account for this age distribution Children are more than three times as liable to develop pellagra during the first year's residence in the orphanage as in any subsequent year There appears to be some relation between the amount of animal foods consumed and the spread of pellagra in orphanages The predisposing factors, age, sex, hereditary weakness, poor nutrition and coincident diseases, apparently were operative in this series of cases

DISCUSSION

Dr J F Siler, Washington, D C In connection with a study of another orphanage in this state which we made during the course of two years, it might be interesting to refer to two or three points that Dr Rice has brought out in his paper This institution had about 250 orphans, the ages ranging from 5 or 6 to about 18 The majority were females, and it was interesting to find, just as Dr Rice found, that about 75 per cent of the children developed pellagra in the first year of residence Two children, aged 5 and 6 years, were sent to the orphanage from Lancaster, Pa It is *improbable* that the disease existed prior to their admission Within six weeks after admission both of these children had pellagra The diet, you can call it incomplete, poorly balanced, or anything you may choose, was not a good one They had in this institution about forty cows, and the dairy supply of milk in 1914 was about 50 gallons per day A great deal of the milk was made up into butter and there was much buttermilk They had peas and beans frequently, and slaughtered *their own* beef twice a week, so that they sometimes had enough beef to last for four days during the week *In the fall* and winter they had a great deal of fresh pork, but the diet was not, *in* our opinion, a satisfactory one, and we recommended that they add milk and eggs and more fresh meat

I do not think beans and peas have anything essentially to do with the prevention of pellagra I do think, however, that beans and peas should enter extensively into the dietary of the people, and so far as we could determine in our field observations in this country and elsewhere, they do form a very conspicuous feature of the dietary where pellagra is endemic I was somewhat surprised in the fall of 1914 to see the papers of the South filled with the slogan, "To cure pellagra, eat beans, to prevent pellagra, plant beans and peas" I note that the slogan this year (1915) is, "Buy a cow" To this recommendation I most heartily subscribe Our *dietary* investigations lead me to doubt very seriously that beans and peas contain the hypothetic pellagra-preventing vitamins in any great amounts

Dr W J MacNeal, Washington, D C A thing of great *importance is the* age distribution of pellagra This is probably a matter of physical resistance of individuals at different ages It means simply the resistance to disease of all sorts, and follows that curve Of course it is not absolutely so, but there is that tendency to resistance of disease of all sorts During the period from 15 to 19 the death rate is low and the natural vitality greater than in other periods The recovery of these patients while continuing on the same diet is important These children come here, they take this deficient diet, which we may criticize as much as we will, without saying in exactly what respect it is *deficient* They show typical erythema, and subsequently recover and live three or four years without recurrence

Dr. Joseph Goldberger, Washington, D C The immunity to which Dr Rice calls attention, which apparently developed after one or two years of residence at the orphanage can be explained by the fact that after a year or two of institutional residence, the child reaches the age which admits it to the group having the better diet The fact that the difference in the diet of the younger and of the older children did not seem adequate to Dr Rice to explain the difference in the incidence of pellagra in the two groups should have no weight The important thing to remember is that a difference was discernible In the present state of our knowledge we have no way of telling whether a particular diet is adequate or inadequate The only way we can judge of that is by its physiologic effects that is, by trying it for a long enough time

Dr George C Mizell, Atlanta, Ga If diet is the cause of pellagra, there must have taken place in the diet of the American people some radical change Fifteen or twenty years ago people were just as particular in the selection of their diet as they are today Take into consideration the fact that in 1908 only 10 per cent of the people were eating cottonseed oil products In 1910, 48 per cent of the people were eating cottonseed oil products The consumption of cottonseed oil products jumped to 50,000,000 gallons in 1908

Dr H W Rice, Columbia, S C My personal opinion is that children should be fed more milk and not so much meat, but they should have more of both than the children of this orphanage have had Coincident disease as well as dissipation in adults no doubt plays a part in the etiology As to Dr Goldberger's point, that there was shown to be a difference in the diet in the older and younger children, I said that the slight difference did not seem adequate to account for the relative difference in the incidence of the disease in the respective groups Of course it can be only a matter of opinion in the present state of our knowledge of the subject

Comparison of Chemical Changes in Central Nervous Systems of Pellagrins and Animals Subjected to an Exclusive Vegetable Diet

Mathilde L. Koch and **Carl Voegtlin** Spartanburg, S C If pellagra is due to a dietary abnormality, as has been suggested by many students of the disease, it should be possible to reproduce in animals by dietary means some, if not all, of the pathologic changes which are observed in pellagra The present paper represents an abstract of one phase of this investigation, and can be summed up as follows The diet which seems to give rise to pellagra is made up largely of vegetable foods being rich in carbohydrates This diet, if fed continuously to healthy monkeys, rats, mice and other animals leads to symptoms and chemical and histologic changes in the organs very similar to those found in pellagra Although the explanation as to how this diet leads to pellagra is still lacking the observations made on our animals furnish valuable support to the dietary theory of this disease. These observations are particularly important when brought into connection with the extensive unsuccessful attempts to transmit the disease to animals by means of inoculation of material from pellagrins Both the diet used in these feeding experiments and that consumed by persons developing pellagra seem to be lacking in certain chemical substances contained in relatively large amounts in such animal foods as milk eggs and meat.

DISCUSSION

Dr. J F Siler Washington D C. It is extremely interesting that pellagra concurs with such remarkable rarity in nursing children We know from the literature of the subject that beriberi a deficiency disease is common in nursing infants If pellagra were a deficiency disease it seems to me that its age distribution, so far as nursing infants are concerned, would be similar to that in beriberi As a matter of fact it is hardly possible to have a more remarkable dissimilarity

Dr. Roy Blosser Atlanta, Ga I am sorry that Dr Voegtlin did not emphasize the pathologic conditions in the spinal cord The essential changes in pellagra of the spinal cord are in the upper part of the cord and distinguish them from the changes in other diseases, notably tabes I think corn syrup in the diet was mentioned That term, I think, ought to be eliminated because corn syrup is a mixture and it has a very high percentage of glucose which, so far as we know, is chemically pure That is the only place where the corn gets in so I think it would be much better if that term were eliminated but I do not know what term could be substituted in its place

Carl Voegtlin Spartanburg S C In regard to the comment of Dr Blosser it seems unnecessary to call attention to the great similarity of the photomicrographs of the spinal cord in our experimental animals with those obtained from pellagrins Anybody who has seen the work of Tuezek will be struck by the great resemblance of his illustrations with those presented today The corn syrup used at the Pellagra Hospital is not chemically pure glucose, it is made from corn starch

Differential Diagnosis of Skin Manifestations of Pellagra

Dr. Cosby Swanson Atlanta Ga The differential diagnosis must be made on clinical grounds alone. We have neither definite etiologic knowledge nor laboratory diagnostic methods The skin manifestations present congestion, thickening and pigmentation and atrophic thinning The eruption may begin as macules which fuse, forming patches of livid red erythema The tissues are generally swollen In a short time the redness fades and the surface becomes covered with scales In some cases vesicles bullae and ecchymotic lesions complicate the process The surface may become raw The skin may resume a normal appearance, but after several recurrences it atrophies A symmetric distribution of the lesions is characteristic Itching and burning often precede the eruption At the beginning it may resemble a sunburn Skin diseases resembling pellagra are acrodynia, erythema solare, erythema caloricum, erythema ab igne, erythema pernio, erythema multiforme, eczema, trade dermatitis, dermatitis venenata lupus syphilis and erysipelas Acrodynia somewhat resembles pellagra, but runs a shorter course, rarely ever recurs, and is rare Sunburn resembles the early rash of pellagra, but the area is usually less acutely inflamed There is less redness, and it gradually fades instead of becoming darker as in pellagra, and is followed by less exfoliation Erythema multiforme is prone to recur, is usually seen in spring and autumn, and is accompanied by nervous and gastro-intestinal symptoms It differs from pellagra in that the eruption is found on the flexor oftener than on the extensor surfaces, and seldom on the face, rarely involves the entire surface does not exfoliate and is not followed by pigmentation Its duration is short

Erythema and eczema may be mistaken for pellagra eruptions It generally begins as macules or erythematous spots with swelling accompanied by excessive burning and itching Desquamation begins in a few days and often continues for several weeks and may become chronic Exposure to heat, cold wind and other irritants often causes an outbreak. It differs from pellagra in that it occurs at all seasons is not symmetric is usually seen on the flexor surfaces as well as on the extensor the edema is more marked and it is accompanied with more itching and burning The differentiation from dermatitis venenata can usually be made by the history, duration and location of the eruption

Lupus erythematosus disseminatus can usually be distinguished by the location, shape, time of occurrence color, course duration and other symptoms of pellagra Syphilitic eruptions can usually be differentiated by the history of a primary lesion, the secondary rash on the body, character of eruption positive Wassermann and other symptoms of syphilis

Pellagra

Dr H W Dudgeon, Director, Khanka Lunatic Asylum, Cairo Egypt I can only reiterate my belief in the maize theory of pellagra which is extremely prevalent in Egypt. I have examined physically many thousands of residents of Egypt (mostly Egyptians) from all districts and from all classes of society during the last fourteen years, and it has been impressed most strongly on me how entirely this disease is confined to the villagers of the poor class, it is almost unknown among those who live in the towns and it is also most uncommon in the districts (Upper Egypt) where millet is grown The Egyptian villager's diet has maize as the main ingredient and wherever maize is the staple form of diet there you find pellagra In fact, it is so rife among the villagers that I doubt if it can have been endemic to this country for a great number of years, and with this idea and the similarity of many of the symptoms to some accounts I was able to obtain of chronic atropin poisoning I sent a certain number of specimens of maize to England for analysis with the attempt to see if the alkaloid atropin or its allied group of alkaloids were present No atropin was found but the leaves of certain specimens did contain an alkaloid and one of them did not The alkaloid was too small in amount for identification but it was sufficient to prove that it was not one of the more commonly known alkaloids and the leaves of the specimen happened to be that of the oldest species of maize cultivated in Egypt. My opinion is that pellagra is a multiple neuritis and may be due to an alkaloid administered in minute doses, possibly by the seeds absorbing the poison from the leaves, and that it is accidental and due to maize faultily stored it is evidently not normally found in maize seeds nor do I think all kinds of maize leaves contain it.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

December X, No 6 pp 397 488

1 *Duodenal Ulcer in Infancy an Infectious Disease L Gerdine and H F Helmholz, Chicago
2 Comfortable Arrangement for Separate Collection of Urine and Feces of Male Infants A. M. Courtney and H L Fales, New York.
3 Oxalic Acid Excretion in Urine of Children J P Sedgwick, Minneapolis
4 Phthalein Test in Orthostatic Albuminuria T C Hempelmann, St Louis.
5 Influence of Clothing on Surface Temperature of Infants W B McClure and L W Sauer, Chicago
6 *Ammoniacal Diaper in Infants and Young Children J Zahorsky, St Louis.
7 Acute Myelitis Following Varicella, Report of Case. D C W Smith, Baltimore

1 **Duodenal Ulcer**—In ten out of fourteen ulcers examined by the authors, diplococci were found in the ulcer base, in such numbers and in such a position that they presumably are of etiologic significance Furthermore, in one of the cases a *Streptococcus viridans* was isolated from the duodenal ulcer, which on injection into rabbits and dogs localized in the pyloric end of the stomach and duodenum and there produced hemorrhages and ulcerations This case was the only one in which the authors were able to obtain the organisms in pure culture, and the only one in which the necropsy was performed shortly after death In two other cases a few streptococci were seen in the bouillon cultures, but the cultures were so overgrown with colon bacilli that it was impossible to isolate the streptococci In one case only the colon bacillus was grown

6 **Ammoniacal Diaper**—The ammoniacal diaper is frequently encountered by the practitioner Usually, the odor of ammonia is faint, especially in young infants Only occasionally does the concentration become sufficiently intense to produce the characteristic irritation of the skin The lesions consist of inflamed areas on the inner side of the thighs, the genitals, the buttocks and lower abdomen The skin lesions nearly always appear in the morning when the infant has lain for a long period during the night Infants who do not wet the diaper are not subject to this trouble In fact, enuresis and ammoniuria go together The ammoniacal diaper is a frequent precursor of pyelocystitis in female infants The onset is usually abrupt and the course is irregular and indefinite The irritating urine may be present for one day only, then it may last for weeks Zahorsky has collected notes of seventy-eight cases, in all of which the patients showed some skin lesions, and the ammonia was sufficiently intense to warrant more than a passing notice Of these seventy-eight cases, fifty-four, or about three fourths, occurred in children over 10 months of age The severest lesions occurred in boys The disorder seems to be almost limited to artificially fed infants Zahorsky has searched long for the cause of this disorder and he is now convinced that the ammonia is derived from the ammonium compounds in the urine, and is liberated by an alkali present in the diaper—soap, lye, lime or stool

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

November, III No 5, pp 247 310

8 Schistosomiasis Japonica A C Reed, Changsha, China.
9 Plague Preventive Measures, Their Development and Present Status R. Blue, Washington, D C
10 Experiences in Treatment of Plague in New Orleans. W H Seemann, New Orleans
11 Control of Yellow Fever in Immune Community without Use of Fumigation G M Converse U S P H S
12 Method of Concentrating Malaria Plasmodia for Diagnostic and Other Purposes C C Bass and F M Johns, New Orleans

Boston Medical and Surgical Journal

November 25 CLXXIII, No 22, pp 795 830

13 What General Practitioner Should Know About Incipient Pulmonary Tuberculosis V Y Bowditch, Boston
14 Medical Aspects of Empyema and Pulmonary Abscess. F T Lord, Boston
15 Recognition of Pleural Disorders by Roentgen Rays, with Special Reference to Empyema P Brown, Boston
16 Pneumodynamics of Empyema F J Cotton, Boston
17 *Treatment of Chronic Empyema F B Lund, Boston.
18 *Lung Abscess and Bronchiectasis from Surgical Point of View, Certain End Results of Acute and Chronic Empyema. W Whittemore, Boston

December 2, No 23, pp 831-866

19 Dangers of Ether as Anesthetic W W Keen, Philadelphia
20 *Pregnancy and Diabetes Mellitus E P Joslin, Boston
21 Surgical Specialties in Hospitals P Thorndike, Boston
22 *Etiology and Treatment of Heart Disease P D White, Boston

17 **Treatment of Chronic Empyema**—Lund says that in localized chronic empyema, decortication has usually given most brilliant results and been successful the first time Decortication is not a cure-all or specific It must be thoroughly and intelligently used, and must be preceded and followed by all the tricks and dodges which experience can suggest to secure lung expansion, except those methods which imply suction apparatus and provide an inadequate drainage opening It may have to be supplemented in certain obstinate cases by rib resection On the whole, however, and properly used, it must be regarded as an invaluable method in cases in which the later simple methods fail to cure, and the ultra radical methods are sure to kill patients

18 **Surgery of Lung Abscess and Bronchiectasis**—Although the operation for acute empyema may be a simple one, yet, Whittemore says, the results have been far from satisfactory After an acute case becomes chronic, the outlook for the patient becoming a useful member of the community is questionable Surgery has little, if anything, to offer cases of bronchiectasis at present The surgery of lung abscess is most encouraging, and a greater number of cases are constantly being successfully operated on

20 **Pregnancy and Diabetes Mellitus**—Out of the seven cases of moderate or severe diabetes associated with pregnancy cited by Joslin, four patients are dead, one by suicide, one with uremic manifestations ascribed to neglect, a third died in coma, pregnancy having developed after diabetes had existed for a year, but treatment was neglected, the patient later being under the care of a clairvoyant, and the fourth in which the patient successfully went through her first pregnancy in 1897 with a healthy child, but again was confined and the child lost in 1905, the patient dying two months later of pulmonary tuberculosis Of the three remaining patients, one is in exceptionally good health, free from sugar and has a normal child six months after delivery, another is in a tolerable condition, having been pregnant three times but with only one child now living, and the remaining patient is alive, although severely ill with diabetes six years after confinement All of the seven patients with moderate quantities of sugar in the urine are well

Joslin says that the secret of success in the treatment of pregnant women with sugar in the urine is 1 To have the patients under constant supervision throughout the course of the pregnancy and for some months after confinement 2 Treatment should follow exactly the same methods which are employed in the treatment of the usual case of diabetes 3 Even when sugar appears to a slight extent in pregnant women, it should be carefully watched and controlled by diet 4 The advantages of a cesarean section should be borne in mind 5 Whereas ether anesthesia may work well, it is probably not so safe as gas and oxygen If ether should be used, as brief an anesthesia and as little ether as possible should be employed 6 Finally, many statements occurring in the literature of pregnancy and diabetes must be revised Pregnancy in diabetes does not demand immediate abortion, even if acidosis is present If pregnant diabetic cases are suitably managed, they will likely abort less frequently It cannot yet be accepted as proved that pregnancy aggravates a diabetes It is quite possible that the reason for a patient with diabetes becoming worse during pregnancy is simply due to the ingestion of an unusual quantity of food Nursing is not contraindicated following confinement, for the diversion which it affords the patient may offset the extra demands thrown on the metabolism

22 **Treatment of Heart Disease**—White summarizes his study of 200 cases as follows The male sex is more subject to auricular fibrillation, auricular flutter, heart block and alternation of the pulse than the female sex The older the patient with heart disease the more subject is he to serious abnormalities of the heart beat Auricular fibrillation and alternation of the pulse occur at the same ages, most frequently in the fifth and sixth decades Rheumatic hearts usually show normal mechanism or auricular fibrillation, much less commonly pulsus alternans A considerable percentage (36 per cent) of syphilitic hearts showed alternating pulse, few were fibrillating A patient with cardiac insufficiency in the course of cardiorenal disease is apt to show pulsus alternans, either constant or more frequently only after ventricular premature beats Cardiosclerosis often results in the production of fibrillation and alternation Hyperthyroidism of long standing is sometimes attended by auricular fibrillation Alcohol, tobacco, tea and coffee appear to play no direct part in the production of serious disorders of the heart beat Two thirds of the patients with auricular fibrillation, one half of those with alternation of the pulse, and one-third of those with normal mechanism in the series analyzed by White showed physical signs of cardiac insufficiency Digitalis was used in 88 per cent of these decompensated cases, almost always in the form of pills of standardized leaves Intravenous medication was used in urgent cases only Morphin was given beneficially in nearly one half of the patients with physical signs of insufficiency, often one dose sufficing to give the patient the first comfortable night in weeks Venesection was found useful in a few urgent cases The change in diet to five small meals daily was often much appreciated by the patient

California State Journal of Medicine, San Francisco

November XIII No 11 pp 415-454

23 Modern Diagnosis of Hematuria. M Krotoszyner, San Francisco
24 Clinical Records. E S Kilgore San Francisco
25 Conditions in Lower Back Involving Sacrolumbar and Sacro-Iliac Articulations C L. Lowman Los Angeles.
26 Diagnosis of Ureteral Calculi and Technic for Use of Wax Tipped Catheter in Male. F Hinman San Francisco
27 *Finding of Arsenic in Cerebrospinal Fluid Following Intravenous Administrations of Neosalvarsan. J H Barbat San Francisco
28 Blood Transfusion Simplified A. V Doran Vallejo
29 Paper Bag Holder for Reception of Soiled Surgical Dressings H M Sherman San Francisco
30 Panama Pacific Dental Congress L Van Orden San Francisco

27 **Arsenic in Cerebrospinal Fluid**—In the case which Barbat reports, the patient was given a full dose of neosalvarsan and 43 c c of the cerebrospinal fluid was immediately withdrawn This fluid was not examined for arsenic, but showed a strong Lange reaction for paresis Four days afterward he received another dose of neosalvarsan, and 30 c c of the cerebrospinal fluid immediately removed, which was found to contain 1/100,000 metallic arsenic

Journal of Experimental Medicine, Lancaster, Pa

December XXII No 6 pp 675 847

31 *Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. Importance in Production of Hemolytic Jaundice of Path of Hemoglobin to Liver J H. Austin and O H P Pepper Philadelphia
32 *Id Influence of Diet on Anemia Following Splenectomy R. M Pearce J H Austin and O H P Pepper Philadelphia
33 Studies on Circulation in Man Development of Collateral Circulation in Right Hand After Ligation of Innominate Artery for Subclavian Aneurysm. G N Stewart, Cleveland
34 Acceleration of Esterase Action. J W Jobling A. A Eggstein and W Petersen Nashville Tenn
35 Relation of Serum Esterase to Liver Destruction. J W Jobling A. A Eggstein and W Petersen, Nashville Tenn.
36 Origin of Tumors in Mice. Tumor Incidence and Tumor Age in Hybrids. A E. C. Lathrop and L. Loeb St Louis
37 *Influence on Spleen and Thyroid of Complete Removal of External Function of Pancreas. J E Sweet and J W Ellis Philadelphia
38 *Influence on Tadpoles of Feeding Desiccated Thyroid in Variable Amounts and of Variable Iodin Contents C H Lenhart Cleveland.
39 *Experimental Pneumonia (Friedlander Type) W R. Sisson and L C Walker Boston
40 Experimental Study of Blood Glycolysis. Effects of Thyroid and Suprarenal Extracts and Phlorhizin on Glycolysis in Vitro G M Mackenzie New York.
41 *Diet and Tumor Growth W H Woglom, New York
42 *Antityphoid Vaccination H J Nichols, San Francisco
43 Relationship of Chronic Protein Intoxication in Animals to Anaphylaxis W T Longcope New York
44 *Effect of Roentgen Rays on Rate of Growth of Spontaneous Tumors in Mice J B Murphy and J J Morton, New York
45 Biologic Classification of Pneumococci O T Avery New York
46 Spontaneous and Experimental Leukemia of Fowl H C Schmeisser, Baltimore

31 **Relation of Spleen to Blood Destruction**—The experiments reported on by Austin and Pepper indicate that when hemoglobin is set free in the portal circulation a larger amount is held by the liver and converted rapidly into bile pigment than is the case when it is set free in the general circulation, and that, under the former condition, overloading of the liver with bile pigment more readily occurs and jaundice is more apt to develop The authors conclude that this mechanical influence must, therefore, be a factor in the lessened tendency after splenectomy to the jaundice which follows blood destruction due to hemolytic agents for whether the spleen be an active factor in destroying the erythrocytes, or whether it plays merely a passive part as a place for the deposition of the disintegrating cells, there can be no question that in this organ when it is present, a large number of cells undergo their final disintegration after the action of hemolytic poisons, and that the hemoglobin there liberated passes by the portal system directly to the liver When the spleen is removed, this disintegration occurs in other organs, notably, in the lymph nodes and bone marrow, and the hemoglobin from these organs passes not into the portal but into the general circulation, from which it reaches the liver more gradually and in a more dilute form

32 **Influence of Diet on Anemia Following Splenectomy**—The author's experiments showed that the anemia which develops after splenectomy is most marked in animals on a mixed table scrap diet of meat, bread, cereals and vegetables, which is essentially a cooked diet Control studies in which a unilateral nephrectomy precedes splenectomy demonstrate that the anemia is not due to operation, hemorrhage, or accidents of convalescence, but develops only in the absence of the spleen The results of studies of the influence of food containing a large amount of iron in presumably easily utilizable form as in raw beef spleen, do not support the view that the anemia is due to lack of iron in the food Observation on the influence of a diet of raw meat as contrasted with cooked meat, shows a more severe anemia in animals on the cooked diet and suggests the possibility that heat alters some substance which, in the absence of the spleen the body cannot utilize A final conclusion in regard to this point must, however await the results of more detailed studies now in progress

37 **Removal of External Function of Pancreas**—Quite by accident Sweet and Ellis noted in two cases that the complete removal of the function of the pancreas concerned in digestion is followed by marked changes in the spleen and in the thyroid apparatus Second the spleen shows an extreme simple atrophy Third, the thyroid apparatus exhibits a constant change shown by the macroscopic transparency of the gland, by the microscopic increase in the amount of colloid by the chemical increase of the iodin content of the gland and by the functional test of the delayed appearance of tetany after the complete removal of the thyroid apparatus

38 **Influence of Desiccated Thyroid on Tadpoles**—The activity and potency of the physiologically active substance of the thyroid, Lenhart states, is measurable in terms of its percentage iodin content He points out that the reaction of tadpoles to thyroid feeding is so sensitive that the procedure might well serve as a biologic test for the activity of thyroid tissue, superior even to chemical methods

39 **Experimental Pneumonia**—The studies described by Sisson and Walker are based on findings in thirty-nine cats The culture used was recovered from the lung exudate of a patient who died thirty-one and one-half hours after the onset of the first symptoms The organism had the characteristics of *Bacillus mucosus capsulatus* Judging both from the clinical course and from the pathologic findings, this form of pulmonary infection differs from the usual

pneumococcus types of pneumonia and closely resembles the so-called Friedländer's bacillus or *Bacillus pneumoniae* in man In all instances in which a lobar pneumonia was found after the injection of the bacillus, a similar organism was recovered from the lung, and in no case was this associated with other organisms In 87 per cent of the animals showing a lobar pneumonia positive blood cultures were obtained The pathologic findings, judging from the early stages of the disease, are subject to considerable variation In some instances the process may suggest a pseudolobar or confluent lobular distribution In the majority of cases, however, the process gave a more homogeneous appearance, suggesting a diffuse and uniform distribution Foci of hemorrhage were not uncommon in both In all instances the consolidated lung presents a greater infiltration of tissue than is usually seen in other types of experimental pneumonia The histologic findings are also subject to considerable variation In most instances the infundibular and alveolar spaces are completely filled with an exudate made up chiefly of polymorphonuclear cells Associated with these are the capsulated bacilli, large vacuolated mononuclear phagocytic cells, and red blood cells and occasionally small amounts of fibrin

41 **Diet and Tumor Growth**—Woglom found that lactose does not increase the receptivity of mice and rats for the transplantable carcinomas of their species

42 **Antityphoid Vaccination**—Evidence is presented by Nichols on the following subjects (1) the infectious power of a living, sensitized vaccine, (2) the absence of immunity in vaccinated rabbits to direct gallbladder infections, (3) the relative pathogenicity, virulence, and toxicity of the strain used in the army vaccine, (4) local vaccine reactions after typhoid and after immunization, and (5) skin reactions as an index of immunity

44 **Rate of Growth of Tumors in Mice**—According to Murphy and Morton Roentgen ray administered directly to the cancer outside of the body is insufficient to prevent the growth of a graft returned to the original host On the other hand, the same small dose of Roentgen ray given to the animal with the cancer removed was sufficient to render 50 per cent of the mice so treated immune to returned untreated grafts of their own tumors and greatly retard the growth in the other 50 per cent

Surgery, Gynecology and Obstetrics, Chicago

December XXI, No 6, pp 669 786

47 End Results of Seventy Cases of Renal Tuberculosis Treated by Nephrectomy E G Crabtree and H Cabot, Boston
48 *Nephrectomy During Pregnancy, Report of Cases L E Schmidt, Chicago
49 Case of Dietl's Crisis in Anomalous Right Kidney Associated with Left Pelvic Kidney R C Bryan, Richmond, Va
50 Correction of Depressed Fractures of Nose by Transplant of Cartilage E H Beckman, Rochester, Minn
51 Some Interesting Experiences in Thyroid Surgery A McGlannan, Baltimore
52 *Role of Oxyuris Vermicularis in Etiology of Appendicitis and Allied Pathologic Conditions K. Suzuki, Japan
53 Methods Employed for Determining Hydrogen Ion Concentration in Body Fluids. W J Crozier, W B Rogers and B I Harrison, Cleveland
54 *End Results in Two Hundred and Forty Two Cases of Simple Fracture of Femoral Shaft P Martin, Rochester, Minn
55 Vaginal Supravaginal Hysterectomy for Procidentia and Large Cystorectocele Associated with Chronic Fibrosis Uteri H N Vineberg, New York
56 Myoma of Stomach, Report of Case Successfully Removed J E James, Jr, and S W Sappington, Philadelphia
57 Spontaneous Rupture of Spleen J E Cannaday, Charleston, W Va
58 Appendix C C Waller, Lyndonville, Vt, and L G Cole, New York
59 Apoplexy C M Remsen, Atlanta, Ga
60 Chordoma, Report of Malignant Case from Sacrococcygeal Region H Albert, Iowa City, Iowa.
61 *New Operation for Umbilical Hernia F G DuBose, Selma, Ala
62 Intratracheal Ether Anesthesia, New Apparatus and Intratracheal Tube. S Robinson Rochester, Minn
63 *Operation for Cure of Hernia Between Abdominal Recti W E Fairfield, Green Bay, Wis
64 Bullet Removed from Brain After Six Years. E. Mammen, Bloomington, Ill
65 Modified McBurney Incision for Treatment of Appendicitis and Pelvic Disease A H Harrigan, New York.
66 Use and Abuse of Lane Plates J Frank, Chicago

48 **Nephrectomy During Pregnancy**—From the literature as well as from personal observation, Schmidt has come to the conclusion that a woman with one healthy kidney—and that implies that no infection remains whether it be tuberculosis or a pyogenic infection—does not carry much greater risk, nor does the fetus, than the more fortunate woman who has two kidneys, and that consent to marriage and pregnancy cannot be withheld There are questions such as how soon after nephrectomy may one, without danger, become pregnant Schmidt is of the belief that if a period of several years of complete absence of kidney disease elapses it is safe There is a greater need for exact observation of these cases, so that in case of the recurrence of any (nephritic) symptoms, induced abortion or labor can be carried out in order to prevent chronic kidney changes which might result in making an invalid of a woman having only one kidney

52 **Rôle of Oxyuris in Etiology of Appendicitis**—Suzuki examined 500 post mortem cases, among which were 44 oxyuris cases The oxyures were found twenty-nine times (66 per cent) in the cecum and appendix, six times (14 per cent) in the cecum alone, and nine times (20 per cent) in the appendix alone Suzuki was able to ascertain that a true inflammation is provoked by the parasites when the latter have penetrated the wall of the appendix in large numbers, and that the traumatically destroyed fissure in the tissue is for a protracted period of time in connection with the lumen, thus offering the infecting agent a portal of entry This type of the disease offers distinct histologic data, for which reason Suzuki has designated it "appendicitis oxyurica" But this type of the disease is only rarely met, and among 103 surgically extirpated appendices Suzuki met but one case A noninflammatory, but pain-producing morbid condition of the appendix is sometimes caused by the oxyuris in which cases traumatic destruction of the tissue accompanied by hemorrhage can always be demonstrated

54 **Fracture of Femoral Shaft, End-Results**—Martin found that 90 per cent of all cases of simple fracture of the shaft of the femur in children are followed by complete recovery The average period of treatment of children in bed and with crutches, splints and bandages is two to three months Between the ages of 15 and 25 years there is about 50 per cent of complete recoveries, while after 25 years the permanent disability is proportionate to the age of the patient Men above 40 years rarely regain strength and activity In adults in the absence of shortening there may be a lasting weakness of the leg and thigh Permanent disability is as a rule associated with shortening, and is to an extent proportionate to the degree of shortening The average time in bed and with crutches, splints, and bandages in adults is eight months In adults at time of discharge (eight to ten weeks) there is stiffness of the knee in 100 per cent of cases Among adult laboring men, 90 per cent never become able to perform their regular occupations Among adult males not of the laboring class, the great majority are able to perform their regular occupations The unsatisfactory results following the weight extension treatment of simple fracture of the femoral shaft in adults suggest that this method is either inadequate in itself or unskilfully applied Efforts for obtaining better results in adults should be directed to (a) the employment of more weight in procuring extension, in the effort to entirely overcome the deformity, (b) early resort to open operation if extension seems inefficient, (c) the systematic use of massage and passive motion continued for months, (d) a longer use of crutches than is now customary, (e) education of the patient

61 **New Operation for Umbilical Hernia.**—The surgical principles involved in Dubose's operation provide for the attachment of the umbilical ligaments at a point in the suture lines so that the pull exerted by them does not favor gaping The neck of the sac is isolated, opened, and its contents freed and returned into the abdomen, it is then amputated, and the peritoneal edges everted and approximated by a running mattress or purse-string suture A transverse incision is made at the upper, and a parallel incision at the lower margin of the umbilical ring, thus

mobilizing two lateral fascial flaps to be united by interrupted sutures Running in the long axis of each flap is the third tendinous intersection of the rectus abdominis muscle The edges of the upper and lower lines of incision are brought together by interrupted sutures, thus forming a double aponeurotic wall, with lines of approximation at right angles Two figure-of-eight silkworm-gut sutures are introduced, going deeply enough to catch the underlying fascial flap, and brought out through the skin an inch from the margin of the incision When these are tied they relieve the strain in all directions on the aponeurotic lines of union and close the dead space in the subcutaneous fat On the posterior surface of the lateral aponeurotic flaps is the attachment of the umbilical ligaments When the inner ends of these flaps are sutured together the hernial opening in the umbilical ring is closed and the attachment of the round ligament of the liver above and of the urachus and the obliterated umbilical arteries below are restored anatomically All traction exerted by these ligaments pulls on the upper and lower ends of the line of approximation of the two lateral flaps, thus having a tendency to close and not to pull apart the sutured edges of these two flaps

63 **Operation of Hernia Between Abdominal Recti**—The operation proposed by Fairfield depends essentially on the conversion of the two fascial spaces containing the recti into one space, obliterating thereby the natural separation of the two muscles, and interposing both muscles over the hernial point.

Wisconsin Medical Journal, Milwaukee

November XIV No 6 pp 221 261

67 Changing Conceptions of Cardiac Disease E L. Tuohy, Duluth Minn
68 Sudden Changes of Refraction in Diabetes. C. Zimmermann, Milwaukee
69 Diagnosis and Treatment of Pulmonary Tuberculosis. N E. McBeath Livingston
70 Puerperal Sepsis. G A Carhart, Milwaukee
71 Recent Medical Legislation. P F Rogers Milwaukee.

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Journal of Surgery, London

October III No 10 pp 157 348

1 *Ileus Duplex Inflammatory Enterocolic Ileus W S Handley
2 *Clinical Aspects of Visceroptosis. A J Walton.
3 *Case of Paget s Disease (Osteitis Deformans) G Jefferson
4 Cases of Gas Poisoning Among British Troops in Flanders. J R Bradford and T R. Elliott.
5 Hemothorax J R. Bradford and T R. Elliott
6 *Treatment of Septic Wounds in War by Magnesium Sulphate Solution A. E Morison and W J Tulloch
7 Treatment of Traumatic Aneurysms Resulting from Bullet Wounds. R. Morison
8 Traumatic and Arteriovenous Aneurysm. G G Turner
9 Surgical Diseases of Colon R. Morison
10 Unilateral Renal Hemorrhage Due to Obstructive Calcifying Papillitis. C A Pannett
11 Hydatid Disease of Peritoneal Cavity S White and J H Cobb

1 **Ileus Duplex**—Ileus duplex, according to Handley, who has supplied the name, is a condition in which, as the result of a pelvic peritonitis there is obstruction of the intestine at two points (a) In the ileum, at a point about 3 feet above the ileocecal valve, (b) in the sigmoid colon, at the junction of its iliac and pelvic portions These are the points at which the ileum and colon, respectively, cross the brim of the true pelvis to enter the pelvic cavity The segments of paralyzed intestine are two in number First, the portion of ileum contained in the pelvis, that is to say, about the lower 3 feet excluding the last 2 inches, and second, the portion of the large bowel contained in the true pelvis, namely, the lowest portion of the pelvic colon and the upper portion of the rectum The condition, though curable by appropriate treatment, in the early stage often passes unrecognized under the pseudonym of general peritonitis

2. **Visceroptosis**—Sixty-seven cases have been analyzed by Walton. They have been divided into the following groups according to the disease they simulate (1) Cases resembling appendicitis, (2) cases resembling gastric ulcer, (3) cases resembling gallstones, (4) cases resembling gastric carcinoma Twenty-nine cases were diagnosed as appendicitis Of the twenty-nine cases, thirteen have resembled acute and sixteen chronic appendicitis, but this group does not include cases of true chronic or acute appendicitis in which visceroptosis was also present. There were twenty-seven cases resembling gastric ulcer, but five of them must be considered apart from the others These five patients showed well-marked evidence of visceroptosis, but in addition had either a gastric or duodenal ulcer The remaining twenty-two showed visceroptosis alone They were of the type frequently operated on in the belief that a gastric ulcer was present At operation, there was no trace of an ulcer in the stomach or duodenum The operative procedures consisted in dividing any excessive bands or adhesions, and if the appendix was bound down by the Jackson's membrane, it was removed In one patient only, in whom the stomach appeared to be hypertrophied, and in whom there was an excessive pyloric spasm, the pylorus was occluded and a posterior gastro-enterostomy performed In two patients the right kidney was exceedingly movable, and nephrorrhaphy was carried out

The results of operative treatment could not be considered satisfactory as a whole Nearly all the patients showed marked relief for two to six months, but after that time the symptoms gradually returned There were six patients whose symptoms resembled those given by gallstones At operation there were found the same general visceroptosis, the presence of bands and membranes and the evidence of local spasm in the stomach wall In two of the patients the kidney was found to be so mobile that it was considered wise to fix it through another incision in the loin Apart from this, the operative procedures consisted of division of the adventitious bands and adhesions and, if necessary, removal of the appendix Later an abdominal belt was ordered There were five cases resembling carcinoma of the stomach All five cases presented a short history At operation, there was no evidence of carcinoma or other organic gastric lesion Each case, however, showed certain characteristics of the condition of visceroptosis The results of operation were again not wholly satisfactory

3 **Paget's Disease**—Jefferson suggests that Paget's disease is in all probability not an inflammation, but an upset of the internal secretions (especially thyroparathyroid) which control the calcium exchange of the body The early stages of the disease are characterized by a general decalcification, bringing the affection into line with osteomyelitis fibrosa and to a limited extent with osteomalacia At the same time an irregular bony proliferation occurs, sufficient in amount to overshadow in the urinary and intestinal excretion the absorbed bone salts The disease may progress along different lines, presenting itself as an osteomyelitis fibrosa, or having excessive lime deposits, the average case being the mean between the two Although a general disease, certain bones are more severely affected than others The disease may be impossible to diagnose while a single bone is affected, though the Roentgen rays will often reveal disease in the early stages in other bones in which it had not been thought to exist Later, bone salts are deposited in large amounts, this stage being associated with calcium magnesium and phosphorus retention, as has been proved by experiment. During the stage of softening which may be prolonged and gradual, deformities are produced in all the bones, including the skull The several varieties of bone change which have been described by various observers of this disease, may be explained by the morphologic differences which the bones present at different stages of the malady, and the different types—the fibrous or the osseous tissue predominating—which it may assume Benefit may be looked for from the oral administration of extracts of internal secretory glands, though once deformities have occurred they will persist even if the disease is arrested

6 **Treatment of Wounds by Magnesium Sulphate Solution.**—A saturated solution of magnesium sulphate has given

Morison the best results, both clinically and experimentally Forty ounces of magnesium sulphate dissolved in 10 ounces of glycerin and 30 ounces of boiling water, and sterilized in an autoclave, makes the solution ready for use The application is painless, is easily carried out, and the dressings, even in the most septic cases, need only to be changed twice a day In recent injuries the wound is freely opened up, the bullet, portion of shell, clothing or other foreign body is removed, and the whole wounded surface is swabbed with pure phenol In the case of fractures, the ends of the bone are treated in the same way, and loose but attached fragments are not removed The wound is gently packed for twenty-four hours with gauze wrung out of phenol lotion (1 in 20), and antiseptic wool applied as an outer dressing At the end of this time the wound is dressed, the gauze plug is removed, the wound is syringed out with magnesium sulphate solution, and loosely packed with sterile gauze wrung not too hard out of the same solution, and the whole area of the wound is then covered with a double layer of gauze or lint saturated with solution, over which a piece of jaconet, then cottonwool, is placed, the whole being fixed loosely by a bandage In the case of wounds of later date, in which sepsis and suppuration are fully established, the treatment by phenol is omitted and magnesium sulphate solution is commenced at once

Dressings, even in the worst cases, are only changed every twelve hours, thus saving the patient much discomfort and trouble Morison states that the effect on the wound is striking In two or three days pus has almost disappeared, sloughs begin to separate, and the whole surface of the wound presents a bright-red color The granulations never become flabby or edematous, but instead a firm, vascular healing wound is seen The growth of epithelium from the edges of the wound proceeds vigorously, and the treatment may be continued with advantage until the entire wound is healed Constitutional symptoms seldom occur, probably owing to the fact that absorption is prevented by the density of the granulations, there is, therefore, no general disturbance of health, there is an absence of lymphatic and glandular infection, and secondary abscesses are almost unknown The effect in the majority of compound fractures is quickly manifest Pus rapidly disappears, and the amount of necrosis in comminuted cases appears, as would be expected when infection is diminished, to be materially less

British Medical Journal, London

November 6 II, No 2862, pp 665 696

12 *Nervous Affections of Sixth and Seventh Decades of Life J M Clarke.
13 Wound Infections and Their Treatment (To be Continued) A E Wright
14 Operative Treatment of Gunshot Injuries of Nerves F Eve and R. S Woods

12 See *Lancet,* December 11, Abstract No 16

Lancet, London

November 20, II, No 4812, pp 1121 1172

15 Bright's Disease in Some of Its Clinical Aspects S West
16 Some Aspects of Cerebrospinal Fever Problem H W Crowe
17 *Intermittent Fever of Obscure Origin, Occurring Among British Soldiers in France G H Hunt and A C Rankin
18 Bacterial Antagonism, with Particular Reference to Meningococcus L. Colebrook
19 Blackwater Fever R. W Burkitt.

17 **Trench Fever**—In twenty-three of the thirty cases studied by Hunt and Rankin, the onset was sudden, in seven more gradual In the former case the disease began with head-headache, dizziness and shivering, in the latter with headache and general malaise The chief symptoms were headache and pain in the back and legs Headache occurred in every case It was rarely severe, and in two cases only was it intense, it was usually frontal Pain in the lumbar region was present in twenty-seven cases, pain in the legs in twenty-six, in no case was it severe Pain and stiffness in the neck was rare. Abdominal pain occurred in four patients radiating round from the back, and was probably of muscular origin Dizziness was complained of in the majority of cases, and was an early symptom, but sometimes it persisted for several days Two patients fainted at the beginning of the illness Vomiting was rare (four patients only), and was never persistent, in every case it was associated with and probably due to obstinate constipation Constipation was present in seven patients, diarrhea only occurred once, and then lasted one day Dryness of the throat was complained of by two patients, but in neither case was there any redness of the fauces

The most striking feature in the condition of the patients was the absence of any objective signs There was little constitutional disturbance, and only three patients looked really ill The temperature was at first raised, then fell to normal, and this fall was followed by one or more relapses With each relapse there was a recurrence or an aggravation of the symptoms The pulse rate was not raised out of proportion to the fever The tongue was sometimes clean, but more often was slightly furred, in three patients it was thickly coated There was generally some tenderness over the back and legs, but it was always slight, in four patients there was a little tenderness of the abdominal muscles The heart and lungs showed no abnormal signs, and bronchitis was always absent The spleen and liver were not enlarged The urine was free from albumin In one patient herpes labialis was present. The investigations undertaken with the object of attempting to establish something definite in regard to the etiology of this fever have been disappointing It is certain that the disease is not contagious in any high degree, for, although no precautions for isolation were taken, no patients in the same ward developed the disease One orderly in the ward, however, had a typical attack with one relapse

Bulletin de l'Académie de Médecine, Paris

October 26 LXXIV No 43, pp 465 483

20 Operative Treatment for Abdominal Wounds E Quenu
21 Mixed Vaccines against Typhoid and Paratyphoid Used in Northern African Colonies E Sergent and L. Nègres
22 Roentgen Localization of Projectile in Tissues (Procede radioscopique pour determiner la situation d'un projectile dans les tissus en direction et en profondeur) P Pierre
23 *Rigidity of Wounded Limb as Sign of Impending Gangrene Prat
24 *Vaccine Therapy by the Mouth against Typhoid F Tremolieres P Loew and Maillart
25 Thick Rubber Bands for Improvised Orthopedic Appliances (Sur l emploi de caoutchouc dit "lance pierres" dans la fabrication de quelques appareils orthopediques de fortune.) Laquerriere and Bourdinière

November 2, No 44 pp 485 508

26 *Epidemic Cerebrospinal Meningitis Sixty Cases Capitan
27 Extraction of Bullets from Bladder by Natural Passages I Legueu See Paris Letter, p 2101
28 Assimilation of Fats in Typhoid (Utilisation digestive des graisses dans la fievre typhoide) R Mercier and others
29 Improvised Semi Rigid Extension Device for Fractures (Une attelle plombocaoutchoutee extensible pour le traitement des fractures) Rosenblith
30 *Further Research on Vaccination against Paratyphoid J Lignières (Buenos Aires)

23 **Rigidity as Sign of Impending Gangrene**—Prat reports four cases of severe wounds in which the limb became rigid in a few hours and gangrene soon followed His experience indicates that this rigidity is practically cadaveric rigidity, from chemical changes in the muscle tissue, with incipient but extensive gangrene Prompt amputation saved three of the men, while the others died under conservative operation

24 **Inefficacy of Oral Vaccination Against Typhoid**—The research reported with tests for agglutinins, precipitins, deviation of complement and opsonic index all testified anew to the utter inefficiency of antityphoid vaccines taken by the mouth

26 **Epidemic Meningitis**—Capitan reports that thirty-four of the forty-five men with meningococcus meningitis recovered under serotherapy, and three of the five with mixed infection Convalescence was always very long and slow weakness and anemia persisting for weeks, even when there had been no complications Treatment was by lumbar puncture, withdrawing as much fluid as possible, usually 20 or

30 c c or more, and injecting from 30 to 60 c c of the therapeutic serum, repeating this daily, for several days, sometimes skipping a day, and sometimes resuming treatment after an interval In this latter case 1 or 2 c c of the serum were injected into a muscle four hours before the intraspinal injection, and no symptoms of anaphylaxis developed in any instance As a further adjuvant, a mixture was given of 4 parts calcium chlorid, 2 parts extract of cinchona and 0 1 part spartein sulphate This supplied a heart stimulant, while combating any tendency to serum sickness

30 **Vaccination Against Paratyphoid in Man and Animals** —Lignieres calls attention to the progressive attenuation of virulence in strains of paratyphoid bacilli cultivated in the laboratory They finally become quite harmless, losing their pathogenic properties, and he warns that vaccines made from such laboratory strains seldom have any prophylactic or curative power The best vaccines are those made with microbes derived recently from spontaneous and grave cases of paratyphoid infection He calls it 'salmonellosis,' referring to the research he published in 1900 in which he apparently demonstrated that certain forms of hemorrhagic septicemia in domestic animals were the work of two species of paratyphoid bacilli to which he gave the name salmonella and pasteurella The former is of the hog cholera, the latter of the fowl cholera type His experience with salmonella derived from recent grave spontaneous cases showed that vaccines could be made sufficiently powerful to immunize sheep and pigs by the mouth against fatal infection He has not been so successful with oral immunization of cattle to date

Paris Médical

October 9 V No 22 pp 373 388

31 Improvised Apparatus for Mechanical Treatment of Paralysis in the Wounded A. Leri
32 Tangential Wounds of the Forearm and Treatment of Their Consequences. Mauclaire and Navarre
33 Wheel Support for Stretchers (Un nouveau train de roues porte brancard pour blesses.) R. Duthoit
34 *Voluntary Mutilations of Soldiers and Medical Ethics P Chavigny
35 Acute Articular Rheumatism in the Men in the Trenches. (Rhumatisme des tranchées) P Guerrieri and M Lelong

34 **Voluntary Mutilations to Escape Military Service** —In some recent sensational cases in France the supreme court decided that the medical experts had been mistaken in assuming that certain mutilations had been done by the individuals in question for malingering purposes In two cases in particular the supreme court reversed without appeal the judgment imposing the death penalty for voluntary mutilation, rebuking the experts on whose testimony the men had been condemned Chavigny here discusses the ethical questions that arise when one suspects malingering of this type Several times the majority of the men reaching the ambulance after an engagement were wounded in the hand and voluntary mutilation seemed the only explanation until it was realized that the men whose legs were not injured reached the hospital quicker naturally than those that had to be carried In some other cases of men accused of voluntary mutilations roentgenoscopy finally revealed a scrap of shell in the tissues In any event the physician should testify only as to the conditions of the wound the direction distance etc but he can never know positively whether the wound was inflicted by the man himself or an awkward comrade or some coconspirator or some enemy at close range This can be determined only by the testimony of witnesses It is useless unjustified and imprudent for the physician to draw conclusions in such cases The authorities recognize this a decree last May emphasizing that the testimony of the medical expert alone is not sufficient for a verdict of voluntary mutilation

Chavigny knows of some instances in which voluntary mutilation was realized by the man s holding his hand up out of the trench, so that the enemy might shoot it, in other cases the man claimed to have shot his left hand or right foot while cleaning his gun In still others the men wrapped the part in a wet cloth before putting the bullet through it, thus preventing powder marks

Presse Médicale, Paris

November 4 XXIII No 53 pp 433 440

36 The Cardiac Neuroses in the Stress of the Campaign (Guerre et nevroses cardiaques) A Martinet
37 Immobilization and Extension Permitting Change of Dressings (De quelques appareils platres armes permettant les pansements) J Abadie.

November 8 No 54, pp 441 448

38 *Massive Albuminuria as Sign of Meningeal Hemorrhage G Guillain
39 *Leverage as Aid in Reducing Dislocations. (De la réduction des luxations au levier) Cochez.
40 Simplified Technic for Electric Treatment of Several Patients at Once (Dispositif simplifie pour l electrisation de nombreux blesses) H Bordier

November 11 No 55 pp 449 456

41 *Typhoid Fever and Antityphoid Vaccination L. Rimbaud
42 *Hemotherapy of Typhus. Escluse
43 Thiosinamin in After Treatment of Wounded Nerves. P Cazamian

38 **Albuminuria as Sign of Meningeal Hemorrhage** —Guillain replies to Macris' communication, summarized in these columns Sept 11, 1915 p 986 He explains that the albuminuria to which he refers is of sudden onset, reaching 2, 10 or 20 gm per liter in one or two days after the meningeal hemorrhage and then rapidly subsiding until in a few days the urine may be nearly or quite free from albumin He has noticed it only in a few cases and found records of only a few cases in the literature But when this massive albuminuria is encountered in a dubious case, it has much semeiologic importance

39 **Leverage in Reduction of Dislocations** —Cochez uses a crutch with long crossbar at right angles near the foot for applying gradual automatic traction, the crutch rest serving as the lever This contrivance is proving extremely useful in reduction of recent and old dislocations of the shoulder, elbow hip joint and knee, as he describes in detail with five illustrations It does away with the necessity for counter traction while the reduction proceeds with mathematic regularity under constant control with the dynamometer Traction equivalent to 60 or 80 kg (176 pounds) can thus be exerted without jerk or shock

41 **Vaccination Against Typhoid** —Rimbaud deplores that the present technic for vaccination against typhoid does not protect against paratyphoid This has continued its ravages, while typhoid has been nearly stamped out in the French army in the region where he is stationed There were 222 cases of typhoid in the nonvaccinated, and typhoid bacilli were cultivated from the blood in 50.9 per cent., but paratyphoid bacilli were found only in 10.3 per cent while the latter bacilli were found in 35 per cent of the 434 vaccinated who developed a typhoidal condition True typhoid bacilli were found in 19 per cent of the 21 vaccinated but once, in 11 6 per cent of the 146 vaccinated three times, and only in 6 8 per cent of the 145 fourfold vaccinated

42 **Hemotherapy in Typhus** —Escluse made intravenous injections of blood taken from convalescents eight or ten days after defervescence and reports that the severe typhus showed a prompt change for the better in the three patients given this treatment The technic was similar to that for ordinary transfusion of blood only that a little sodium citrate was mixed with the blood The cases selected for this treatment were extremely grave, the prognosis unfavorable The experiences related demonstrated that after the organic reaction is exhausted by the severity of the typhus intoxication the hemotherapy is unavailing There is not much chance of success after the tenth day The maximum amounts injected were 30 c c of blood fractioned in three doses during the twenty-four hours, a total of six injections in the course of three days in one case and three injections in four days in the other

Archiv für Gynaekologie, Berlin

CIV No 3 pp 393 579 Last indexed August 28 p 833

44 *Causes Influencing Presentation at Delivery (Die Ursachen der Kindeslagen) F Schatz.
45 *Functioning of the Tubular and Glomerular Systems in the Kidney during Pregnancy (Untersuchungen uber die Nierenfunktion bei gesunden und kranken Schwangeren und Wöchnerinnen) P Werner

46 *Symphysiotomy or Cesarean Section (Symphysiotomie oder Kaiserschnitt) P Hüssy
47 Medicologal Aspects of Perforation of the Living Child (Perforation und Strafgesetzreform) H Lieske

44 **Causes that Influence the Position of the Fetus**—This long article is the second which Schatz has published on this subject It reports the results of extensive clinical research which explain the mechanism of the changes of position of the fetus, the influence of the position of the uterus, and other factors The findings on repeated examination of pregnant women near term, reclining or erect, are given in 140 tables The influence of the sex and size of the fetus, of the time of day, of the contractions of the uterus, influence of preceding deliveries, and the way in which the fetus changes its position and presentation are all discussed in detail The efforts of the fetus to stretch its limbs seem to be the main cause of its changes of position He found that the fetuses displayed as marked characters as in extra-uterine life Some were nervously alert and responded promptly and vigorously to altered conditions, while others were torpid and sluggish and seemed to be governed only by the law of gravity, thus getting into the breech presentation attitude and keeping it

45 **Tests of Kidney Functioning During Pregnancy and the Puerperium.**—Werner gives the conclusions from repeated testing of the work of the kidneys in 28 women with puerperal eclampsia, including 23 primiparas The eclampsia was not of the fulminating type and none of the women died Ten other women examined had pregnancy kidney, quite severe in 3, and terminating in eclampsia In 5 other cases nephritis developed in the course of a pregnancy Nine other women presented pregnancy glucosuria, but tests of kidney functioning showed nothing abnormal Seven other women had pyelitis, but the kidney functioning seemed normal as the tubular system in the sound mate was able to do all the needed work When both kidneys were affected, the tests showed manifest functional impairment The tests were applied also to 15 women who had been delivered under a general anesthetic (Billroth mixture) on account of myomectomy, cesarean section or laparotomy for other cause Eight other women had valvular defects In addition to this clinical material, the tests were applied to 20 healthy women pregnant for the first time and approaching term, 15 primiparas, 8 multigravidas, and 8 multiparas The tests were the usual lactose, iodin and phenolsulphonephthalein technics Necropsy in 4 cases confirmed the findings of the tests

The conclusions drawn from this extensive material are that in healthy pregnant and parturient women the functional capacity of the kidneys is good but not quite up to standard, although the tubuli seem to functionate periodically a little more than under normal conditions After operative deliveries under general anesthesia, both the glomeruli and the tubules show slight but transient impairment of function Compensated valvular defects showed a good response to the iodin and phenolsulphonephthalein tests, but the lactose test revealed some damage of the kidneys With pregnancy glucosuria, the glomerulus functioning was evidently impaired, while the tubuli behaved normally Four of the 6 pregnant women with pronounced goiter responded to the lactose test with glucosuria, indicating weakness of the glomerulus system while the tubule function seemed intact Both systems showed severe impairment in the cases of nephritis, but the tubular functioning soon recuperated after delivery while the glomerular functioning showed scarcely any influence from this

The lactose and iodid tests are thus important aids in distinguishing between actual nephritis and mere nephropathy, and they aid in the prognosis with the latter, as the form with vascular disturbances manifests a marked tendency to become chronic after the termination of the pregnancy The kidneys in eclampsia responded to the tests the same as the "pregnancy kidney," namely, the response to the lactose test was as in normal conditions, but the response to the iodid test ranged between wide extremes, the elimination of the iodid being complete in thirty hours in two cases, in forty-five hours in ten, and not until after the sixtieth hour in two

46 **Symphysiotomy or Cesarean Section**—Hüssy has delivered eight women by Frank's subcutaneous method of symphysiotomy and is convinced that it must be regarded as progress It takes the place of perforation of the living child with a true conjugate down to 7 cm and spontaneous delivery not entirely out of the question It allows waiting as long as the fetal heart sounds are normal It does not compete with extraperitoneal cesarean section, as the latter is indicated when there is manifest infection or spontaneous delivery is out of the question Subcutaneous symphysiotomy is not especially dangerous, although thrombosis seems particularly imminent with it and the damage to the soft parts may have serious consequences

Correspondenz-Blatt für Schweizer Aerzte, Basel

November 6, XLV, No 45, pp 1409 1440

48 *Treatment of Sterility in Women (Behandlung der weiblichen Unfruchtbarkeit.) E von Fellenberg
49 Experiences in a German Base Hospital G Hotz.

48 **Treatment of Sterility in Women**—Fellenberg is convinced that the internal secretions have an important share in preventing conception in some cases Inhibition of the functioning of the sound ovary from a cystic ovary was apparently responsible for the sterility in one of his cases, as the long childless couple had a child born within one year after the cystic ovary had been removed Such inhibition used to be ascribed to nervous influences, but now we explain them by internal secretions, and this permits the hope of effectual treatment of sterility from this cause The genital organs in particular are under the control of the ductless glands, and the secondary sexual characters include not only those of the external genitals and the breasts, but also the changes in the birth tract An infantile condition of the genital organs is generally associated with a chlorotic anemic habitus It is possible that only single segments of the genital organs may fail to develop normally It is also possible that the changes occurring at puberty may exhaust the organism for a time or permanently, and that the ovaries then are unable to functionate normally By giving ovarian extract, the missing stimulus may be supplied and conditions gradually right themselves, permitting conception in time Bab in 1909 strongly commended this treatment, supplemented with lecithin to enable the mother to supply the fetus' need of lecithin He applied measures also to increase the supply of blood in the genital organs The ovarian treatment apparently exerts a local action on the ovaries themselves, as evidenced by more regular menstruation It might also influence growth processes in the uterus and tubes, and thus improve the hypoplastic infantile conditions A tonic action on the general health can usually be relied on Bab advises discontinuing the ovarian treatment after conception has occurred

Fellenberg has found treatment of sterility along these lines effectual in a number of cases In one particularly instructive instance pulmonary embolism and pleurisy had followed the first childbirth and there had been lassitude and headaches during the seven years since with no conception The entire system had evidently been exhausted and the genital functions in particular Under ovarian medication and courses of spa treatment, with hot vaginal douches and sitz baths, the general health improved and the genital functions became normal The woman now has four children

Thyroid treatment may be indicated in certain cases of sterility Among the signs of thyroid insufficiency are the abnormally rapid coagulation of the blood, relatively small neutrophil and high lymphocyte count, such women are inclined to be nervously irritable, with a tendency to spastic constipation and sick headache Sehrt goes so far as to declare that an infantile uterus always suggests thyroid insufficiency With hypofunctioning on the part of the thyroid conception may occur, but abortion follows almost at once Fellenberg has given thyroid treatment for habitual abortion, and it has been successful in a number of instances The blood count must be supervised with special care during the thyroid treatment, examining the blood picture anew every two weeks at least In the cases in this category, women long sterile became pregnant, the tendency to spastic constipation subsided, and the general health improved, while the blood picture returned to normal Weil has also noted progressive improvement in the functioning of the genital organs under thyroid treatment Gross and Tandler have reported that the thyroid was found abnormally small in persons who had been castrated Others have called attention to the elective dilatation of the vessels in the thyroid and the lower pressure in them under the influence of ovarian treatment There is thus much evidence on hand testifying to the reciprocal influencing of the thyroid and the genital organs, and this fact can be utilized to stimulate defective functioning of the latter

Deutsche medizinische Wochenschrift, Berlin

October 14 XLI No 42 pp 1237 1264

50 War and the Public Health (Krieg und Gesundheitsfursorge) A Gottstein. Concluded in No 43
51 Principles and Technic for Constructing Artificial Limbs with Special Regard to the Supporting Points and Suspension J Dollinger Concluded in No 43
52 Simultaneous Vaccination against Typhoid and Cholera. L v Liebermann and D Acel.
53 *Technic for Neurolysis. A. Stoffel
54 *Heliotherapy at the Field or Base Hospitals. (Sonnenbehandlung im Felde.) C Deutschlander
55 The Fight against Venereal Disease among the Troops. (Bekampfung der Geschlechtskrankheiten bei der Truppe.) L Halberstaedter
56 Chemical Diagnosis of Acute Benzol Poisoning by Joachimoglu s Technic. E Schmitz.
57 *Occurrence of Conception in Relation to Ovulation (Wann ist der Beischlaf befruchtend?) P W Siegel
58 Research on Artificial Parthenogenesis is the Road to Discovery of Means to Promote Regeneration of Tissues. (Ueber stimulierende Einwirkungen auf Zell und Geweberegeneration) M Popoff

53 **Neurolysis**—Stoffel mentions among other technical points that regeneration of a nerve proceeds much more actively and promptly when the nerve is completely relaxed He decries any attempt to resect cicatricial tissue involving a nerve until after each of the nerve fibers has been separated from the mass and isolated into sound tissue above and below By this means the intact strands of true nerve tissue can be loosened from the scar tissue and saved unimpaired The scar tissue once excised the nerve fibers, or what is left of them are collected together into a single strand again and something to serve as a sheath is wrapped around them He prefers for this calf arteries or calf peritoneum hardened in formaldehyd Seven cases are described in detail to illustrate the advantages of exploring the cicatricial tissue in this way to recognize and save every scrap of true nerve fiber tissue.

54 **Heliotherapy for the Wounded**—The beds were placed in an abandoned greenhouse and Deutschländer reports that severe wounds healed unusually quickly under the heliotherapy thus rendered possible as he describes in detail

57 **Date of Conception in Relation to Menstruation.**—Siegel charts the data obtained by comparing the date of a soldier s brief furlough with the pregnancy of his wife His chart is based on 100 cases The data confirm the assumption of a close time connection between the bursting of a follicle and conception

Munchener medizinische Wochenschrift, Munich

November 2 LXII No 44 pp 1489 1524

59 *Mechanism of Sudden Death with Angina Pectoris. (Zur Erklarung des plotzlichen Todes bei Angina pectoris) H. E Hering
60 Artificial Limbs for the Wounded (Aufgaben und Wege fur den Hand und Armersatz der Kriegsbeschadigten) O Witzel (Ueber Prothesen bei Amputationen des Armes) Biesalski (Prothesen aus Weissblech) v Baeyer (Kautschukschaum zur Herstellung kunstlicher Glieder) C S Engel.
61 Fatal Air Embolism during Insufflation of Kaolin (Todliche Luftembolie durch Bolusinsufflation mit Nassauers Siccator) A. Hamm
62 Autogenous Vaccine Therapy of Furunculosis. (Zur Impfbehandlung der Furunkulose) H. L. Heusner
63 *Treatment of Recent Gonorrhea by Prolonged Very Hot General Bath (Die Fiebertherapie der Gonorrhoe.) O Weiss
64 Impairment of Vision in Active Military Service. (Ueber Blendungserscheinungen im Felde) M. Zade.
65 Roentgen Stereophotography for Estimating Anatomic Distances. (Ueber die Anwendung der Stereophotogrammetrie des Rontgenbildes in der feldarztlichen Tatigkeit) A Hasselwander
66 Localization of Foreign Bodies (Vereinfachung zur Tiefenbestimmung von Fremdkorpern) T Christen
67 Sexual Abstinence. (Bemerkungen uber die von der Deutschen Gesellschaft zur Bekampfung der Geschlechtskrankheiten unternommene Sammelforschung in betreff der sexuellen Abstinenz.) L. Lowenfeld

59 **Ventricular Fibrillation Main Factor in Sudden Death in Angina Pectoris**—Obstruction of the coronary arteries, in connection with other factors, is liable to induce ventricular fibrillation The predisposing factors are the size of the artery, the functioning of the area it nourishes, general anesthesia, hemorrhages, and trauma in the vicinity The direct exciting factors may be listed in order of importance as the local ischemia, local action of toxins, carbon dioxid in particular, and, finally the heterotopic impulse, that is, the abnormal impulse to uncoordinated contractions of the fibers of the ventricle walls The abnormally located impulse for the wave of contraction is the immediate precursor of the fibrillation for we know that this is the consequence of the highest degree of heterotopic impulse production (*heterotope Reizbildung*) The direct actual proof that the sudden death in angina pectoris is the result of ventricular fibrillation can be supplied only by electrocardiography And as death occurs instantaneously, it may never be possible to apply this method of examination unless chance intervenes But if this testimony could be once produced, it would demonstrate that the individual does not die from paralysis of the heart but from the direct opposite, the excessive production of impulses This knowledge would give us the clue to prevention and treatment, as we would seek to ward off everything that might favor heterotopic impulse production Even if we knew only that angina pectoris is a symptom of heart disease, the extreme suddenness of death, without anatomic findings, could be explained only by fibrillation of the ventricles But we already have data which show that angina pectoris occurs only when there is temporary ischemia of the heart, and we know by experiments on animals that this ischemia is liable to precipitate fibrillation of the ventricles and also that the ischemia predisposes the heart to fibrillation Hence even the pathogenesis of angina pectoris sustains the assumption that death is the result of ventricular fibrillation (*Herzkammerflimmern*)

63 **Artificially Induced Fever Temperature in Treatment of Gonorrhea**—As the gonococci are killed so easily by temperatures of only 42 C (107 6 F), attempts have often been made to sterilize the urethra by application of heat But the constant influx of blood keeps the temperature below the required degree of heat, and all such attempts have proved futile to date Weiss solves the problem in another way, by keeping the patient in a hot bath until the entire body is heated to the required fever temperature In eleven cases of recent gonorrhea he had the men take a hot bath forty or fifty-five minutes long, with the temperature of the water gradually increased from 40 to 43 5 C (104 to 110 5 F) In one case the body temperature was raised to 42 6 C (108 5 F) in a forty-minute bath and the gonococci disappeared entirely at once In the other cases the body temperature did not go so high, but the vitality of the gonococci was evidently reduced and under a few local injections they soon all disappeared

Hospitalstidende, Copenhagen

November 10 LVIII No 45 pp 1151 1174

68 *Hereditary Hemorrhagic Telangiectasia (Osler) E. Gjessing Concluded in No 46

68 **Hereditary Hemorrhagic Telangiectasia.**—Gjessing gives an illustrated description of a case of this typical affection, as described by Osler, in a man of 51 and of a second and third case in his son and his daughter This makes the nineteenth family on record in which this affection has occurred in two or more generations, and he gives a summary oversight of the nineteen families In his cases the tardy angiomas were familial, they developed like an eruption, they were located exclusively in the face and

adjoining mucosa, and some of them—mostly those in the nose—bled spontaneously, or after trauma Sometimes the hemorrhages were quite profuse, but there were no signs of hemophilia.

Hygiea, Stockholm

LXXVII, No 19 pp 1005 1084

69 *Diagnostic Importance of Occult Hemorrhage in Gastro Intestinal Tract. (Om smygande blödningar inom matsmaltningskanalen) L Wolff

69 Occult Gastro-Intestinal Hemorrhage—Wolff gives the detailed history of the study of occult gastro-intestinal hemorrhage to date, and emphasizes the diagnostic importance of positive findings provided no meat has been eaten for the few days preceding He emphasizes further the marked tendency to heal of a solitary gastric ulcer, which renders persisting occult hemorrhage so significant He also comments on the necessity for strict regulation of the diet after operations on the digestive tract He regards testing for occult hemorrhage as an indispensable routine procedure in all dubious cases, at least in all dubious stomach cases In his own recent practice the positive and also the negative findings in a number of cases gave the clue to the real source of the trouble, confirmed by the later course of the cases The value of the test was shown particularly in a case of severe anemia with hemoglobin below 50, but no symptoms on the part of the digestive tract except occult hemorrhage In another case there was intense cardialgia and gastric ulcer was assumed, but no benefit followed treatment on this basis and no occult hemorrhage could be detected On this negative finding, treatment for syphilis was instituted and prompt recovery followed In another case anemia and nervous symptoms on the part of the stomach were assumed at first to be a recurrence of a gastric ulcer which had been successfully treated ten years before The constantly negative tests for occult hemorrhage apparently excluded gastro-intestinal trouble, and under general tonic measures health was soon regained In a case of chronic hyperacidity with pains, vomiting and emaciation, the absence of occult bleeding excluded cancer, and no trace of malignant disease was found at necropsy In gastric ulcer cases the improvement under treatment could be followed in the subsidence of the occult hemorrhages Occult hemorrhage also revealed in some cases the presence of malignant disease in the stomach before there was any tumor or debility, and in many dubious cases turned the scale one way or the other, and always reliably, according to Wolff's experience to date

Norsk Magazin for Lægevidenskaben, Christiania

November, LXXVI No 11 pp 1305 1472

70 *Three Cases Illustrating Connection between Diabetes Insipidus and Functioning of the Hypophysis Cerebri K Motzfeldt.
71 *Action of Hypophysis Extracts on Diuresis, Blood Pressure and Nitrogen Metabolism in Fifteen Relatively Healthy Subjects. (Studier over hypofyseekstrakters virkninger —særlig paa diurese, blodtryk og N Omsætning, hos relativt friske mennesker) K Motzfeldt
72 *Orthostatic Albuminuria and Its Relation to Nephritis P F Holst

70 Diabetes Insipidus and the Hypophysis Cerebri—Motzfeldt's article is an able summary of the literature on this subject to date, with detailed reports of three cases of diabetes insipidus In none of them could anything abnormal be discovered in the hypophysis, but a number of symptoms pointed to insufficiency of the posterior lobe of the pituitary body Marked benefit followed treatment with an extract of this lobe From five to seven beef pituitary glands had to be eaten at a time, Motzfeldt says, to obtain an effect even approximating that of one-fourth of a syringeful of the commercial extract

He knows of no case on record in which pituitary treatment was applied so systematically and so perseveringly as in one case here described No other measures had any effect except that opium slightly reduced the diuresis, probably by the diminished thirst This patient is a trained nurse of 42 The diabetes insipidus developed in 1913, with diuresis of from 8 to 10 liters She increased 20 pounds in weight, and menstruation ceased, with increasing lassitude The intake and output of fluids, the specific gravity, the proportional elimination of chlorids and of nitrogen and the total amount of the latter eliminated are recorded day by day during three months under treatment with an extract of the posterior lobe of the pituitary body The benefit from it was manifest, less urine was voided and the patient felt better Treatment was then continued with pituitary substance obtained fresh from the slaughter-house each day The beef glands were sliced and cooked or eaten raw or dried She thus took from two to seven each day and finally took seven every second evening on retiring Under this treatment she sleeps quietly all night, is not tormented by thirst, has lost 2 pounds, and feels perfectly well, while menstruation has returned One of the tables shows the effect of hypophysis treatment on the concentration of the urine It was given every two hours, and the urine was examined at corresponding intervals The density ran up at once from 1,004 to 1,014 and reached 1,017 after the fifth subcutaneous injection of 0.5 c c of the extract

The extract of the anterior lobe did not seem to influence the diuresis, and neither extract seemed to affect the elimination of nitrogen In the second case, the patient a woman of 23, the diabetes insipidus developed after chicken pox at the age of 10, and had persisted for thirteen years The general aspect suggested Lorain's "hypophyseal dystrophy" The third patient was also a woman, now 39 Cerebrospinal symptoms of syphilis during the last four years suggest that the diabetes insipidus, installed for the last six months, may owe its origin to some gummatous process in or encroaching on the posterior lobe of the pituitary body The visual field was normal in all the cases, and roentgenoscopy of the base of the skull revealed nothing abnormal Motzfeldt suggests that cases of primary polydipsia should also be examined for pituitary insufficiency

71 Influence of Hypophysis Extracts on Metabolism—In the fifteen relatively healthy persons tested, an extract of the posterior lobe reduced the output of urine and increased its concentration, but the elimination of nitrogen did not seem to be affected

72 Postural Albuminuria in Relation to Nephritis—Holst examined postmortem the kidneys of a youth of 16 who had had typical orthostatic albuminuria during the last five or six years but had beeen otherwise normal until he contracted galloping tuberculosis of the lungs Not a trace of inflammation could be discovered in the kidneys, notwithstanding the years of pronounced postural albuminuria He cites further a number of clinical cases all confirming the same, namely, that this postural albuminuria may in some cases be of purely functional nature Hence it is irrational and may be positively injurious to treat a person with postural albuminuria as if he had actual kidney disease He reports from his hospital service ten cases in which the orthostatic albuminuria was a chronic condition but no tube-casts were ever found in the urine Several of these patients had been sent to the hospital for assumed nephritis and had been treated for this In five other cases there was pronounced orthostatic albuminuria but at the same time the presence of tube-casts, high blood pressure and increased area of dulness over the heart indicated nephritis In the first group there seems to be no tendency to actual nephritis, but such patients generally need tonics and general building up to aid them in outgrowing the tendency to postural albuminuria Of the fifty persons with postural albuminuria he has encountered, two have died of tuberculosis

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TROPICAL SANITATION IN ITS RELATION TO GENERAL SANITATION *

W C GORGAS, M D
Surgeon General United States Army
WASHINGTON, D C

As this evening I am speaking to health officers, I shall dwell more particularly on matters which have forced themselves on my attention during a lifetime spent in most active health work From long experience, certain convictions have been gradually forced upon me as basic in all health work These basic facts have not been generally recognized, as far as my experience goes To make my argument clear, I shall run briefly over my own experience in this field

The great awakening in tropical sanitation which has taken place in the last twenty years began with the Spanish-American War For the last three or four hundred years it has been known by Europeans that military expeditions involving any large bodies of white troops could not be undertaken in the tropics on account of the great loss from disease In the many cases in which such campaigns had been undertaken, they had failed on account of the loss of life caused by, and the disability due to, tropical diseases These tropical diseases in the Western hemisphere were chiefly yellow fever and malarial fever

It is astounding to the military sanitarian of the present day to read of the losses caused by yellow fever to military expeditions in the West Indies One can hardly believe the loss reported as possible The English Army in the Windward Islands in 1794 under Sir Charles Grey, out of a total strength of 12,000 men, lost 6,000 The French Army in Santo Domingo in 1798, out of a total strength of 25 000, lost over 22,000 from yellow fever Again in 1802 the French Army in Santo Domingo, out of a total strength of 40,000, lost 20,000 Where it prevailed it was equally fatal to civil populations Yellow fever has many times ravaged the United States, and still more severely affected Spain In 1798 Philadelphia, out of a population of 20,000 inhabitants who remained in the city, lost 4,000 New York City, out of a population of 50,000 in 1798, lost 2,500 New Orleans, out of a population of 100,000, lost, in 1853, 8,000 of its citizens Spain in 1800 lost 60,000 people from yellow fever, and again in 1804, 50,000 Barcelona in 1821, of a population of 70,000, lost 16,000 Gibraltar in 1804, with a population of 10,000, lost 6,000

These figures give some idea of the disease in its bad form Yellow fever, like syphilis, was an American disease and was not known to Europeans before the discovery of America by Columbus The severity of yellow fever is such that it has prevented successful colonization by Europeans in countries where it can become endemic

About the beginning of the nineteenth century it looked as if yellow fever was about to spread over the whole known world If the manner in which yellow fever became epidemic in Spain is any measure of the manner in which it would affect China and India, some idea of these conditions can be imagined About the middle of the nineteenth century the area affected by yellow fever began to decline, and it has since then continued to contract till at the present time it has almost become extinct

All during the nineteenth century the United States was so frequently ravaged by epidemics of yellow fever, and so great loss of life and loss of wealth had been thereby brought about, that the people were willing to go to great expense or submit to drastic measures for the purpose of getting protection from the disease It was very evident to sanitarians who had given any study to the matter that the epidemics which affected the United States were imported from the endemic focus, which had existed at Havana, Cuba, for the preceding 150 years The United States was, therefore, very anxious to get rid of Havana as an endemic focus

When we came into possession of this city in 1898, as a result of the Spanish-American War, every endeavor was made by the authorities to eradicate yellow fever The whole attention and force of the government were centered on the effort to clean up the city Yellow fever was then believed to be the best example of a disease caused by filth In 1900, two years after our occupation, Havana was one of the cleanest cities in the world But yellow fever was worse than it had been for several years I, at this time, was health officer of the city under the military governor The authorities were at their wits' ends and knew not what to try The Cubans were very much inclined to poke fun at us and at our extraordinary ideas on the subject of sanitation

I one day overheard a conversation on this subject between a Cuban man and his wife A large tenement-house had been emptied of its inhabitants for the purpose of cleaning and disinfecting The families were sitting around on their household goods in all degrees of discontent and irritation Both husband and wife criticized the eccentric Americans very freely The wife began to advance some extenuating circumstances — that after all the cranky Americans would leave their house clean and free from bugs The husband took the ground that the Americans had a

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* Address delivered at the Fifteenth Annual Conference of Health Officers of New York State at Rochester Sept. 6 1915

right to be as cranky and clean as they wished as long as they applied it to themselves, but when they attempted to force their crankiness and their cleanliness on free-born Cubans things had gone entirely too far

The Havanese population as a whole were very patient under our rigid sanitary measures I shall always remember with kindness and affection their good natured attitude toward the sanitary department during the four years I spent in their midst as health officer of the city

A distinguished physician of Havana, Dr Carlos Finlay, had been maintaining for the previous twenty years that yellow fever was conveyed from man to man by a certain species of mosquito, the stegomyia From the known facts with regard to yellow fever and from the life history of this species of mosquito, Dr Finlay had reached this conclusion by a most logical and interesting argument Dr Finlay has died in Havana within the last month at the ripe old age of 82 He is one of the great men in medicine who lived long enough to see his work recognized

The army board, consisting of Reed, Lazear, Carroll and Agramonte, took up in 1900 the investigation of the question of the transmission of yellow fever by the mosquito They carried to conclusion one of the most mathematical demonstrations ever accomplished in medicine They placed men out in the country near Havana, so guarded that it was impossible for them to contract yellow fever from their surroundings They then took the female stegomyia mosquito, allowed her to sting men sick with yellow fever, and then bite the men in this camp The men bitten developed yellow fever They then took material soiled by yellow fever patients in every possible manner, had men sleep in rooms filled with this material for weeks at a time No one contracted yellow fever in this way They took the blood of yellow fever patients and injected it into well men They developed yellow fever They took the blood of a yellow fever patient and passed it through a filter that would stop any particle large enough to be seen by a microscope of the highest power This filtered blood, when injected into the circulation of a well man, still gave yellow fever They heated the blood of a yellow fever patient and then injected it into the circulation of a well man The man did not develop yellow fever They took the blood of a yellow fever patient who had developed yellow fever as the result of the hypodermic injection of blood from a preceding yellow fever case This blood caused yellow fever in the man into whose circulation it had been injected This board, as the result of their labors, published the following very important conclusions

Yellow fever is conveyed from man to man by the bite of the female stegomyia mosquito, and, in Nature, is probably conveyed in no other way The disease is not conveyed by fomites of any kind The disease is transferred by a parasite circulating in the blood and not by a toxin This parasite is too small to be seen by the highest powered microscope then in use, and is killed by being heated The parasite lives in the blood of the patient only during the first three days of the disease, and, therefore, the mosquito can be infected only during that time It takes from twelve to twenty days for the parasite to go through its development in the mosquito and pass from the stomach to the salivary glands of the insect Therefore, the mosquito is harmless for the first twelve days after biting the man sick of yellow fever

The sanitary department of Havana took these important announcements of this board, and worked out the measures whereby they might be made of practicable effect in our fight against yellow fever We established a quarantine whereby all infected ships or persons coming into the harbor of Havana were cared for, and a system of inspection whereby all such persons coming in by land were looked after Our inspectors also saw daily at Panama every individual liable to yellow fever A yellow fever patient was so screened and cared for that the stegomyia could not bite him The attempt was made to kill by fumigating all mosquitoes that might have become infected from each case And, finally, the attempt was made to destroy all mosquito larvae breeding anywhere within the city limits

In the long run we found the destruction of the larvae to be a measure of more importance than all the other measures put together

We commenced our antimosquito work at Havana in February, 1901 The last case of yellow fever in the city occurred in September of the same year Havana had been the great endemic focus of yellow fever for all the Northern hemisphere during the preceding 150 years Since the extinction of yellow fever in Havana, fourteen years ago, this disease has practically disappeared from the Northern hemisphere

In 1898 Sir Ronald Ross of the English army had demonstrated that malaria was conveyed from man to man by another species of mosquito, the anopheles He and other workers had established much the same condition as to the transfer of malaria as I have just described with regard to yellow fever It was evident to the sanitary authorities, therefore, that a very slight extension of the work against yellow fever ought to cover work against malaria This has turned out to be the case Malaria rapidly decreased with the inauguration of the antimosquito work, and has since become practically extinct

In 1904 our government undertook the construction of the Panama Canal On account of the success of the work at Havana, I was placed in charge of sanitation at Panama I succeeded in getting a good many of the men who had acquired experience in the work at Havana to come to Panama These men were of inestimable value not only in the active organization of the work, but also in stemming the tide of fear, discouragement and hopelessness which existed on the isthmus during the first two years of our work there Many of you here can understand what a moral support it is to a health officer to have twenty-five or thirty loyal men behind him These men had been through similar work at Havana and knew that we were bound to succeed if we could only hold on long enough and convince our superiors that we were on the right track But for a period in 1905, when yellow fever was at its height, we found ourselves working among a panic-stricken population who believed that we were cranks and fools Our superiors on the isthmus at this time had become affected by the prevailing panic and were reporting to the authorities at Washington that our work had failed and were asking that we be relieved, and that men more practical and sane replace us

This report would have ended sanitary work at Panama along the lines of modern tropical sanitation had it been acted upon

For two years succeeding this time we were given the loyal support of our superiors, and by the middle of 1907 the work was accomplished The request for our dismissal was made by the commission in June, 1905 In September, 1905, the last case of yellow fever occurred in the city of Panama, and only one case has occurred in the Republic of Panama since that time All health conditions rapidly improved, and soon the isthmus, as to health, would compare favorably with many parts of the United States

The eradication of yellow fever and the control of certain other diseases was undoubtedly due to the special sanitary measures taken against these diseases But these special measures could have had no effect on the general health conditions For the last fifteen years I have given a great deal of thought to this matter What did we do at Havana and Panama to cause the great general improvement in health conditions which took place shortly after our arrival at both places, and has since continued?

At Panama shortly after our arrival we increased the wages of the common laborers from 11 cents an hour to 20 cents an hour This was nearly four times the wages of the laborers in the surrounding countries He knew that every fourth man would die each year of diseases prevalent on the isthmus, and it took strong inducements to get him to come at all

If we paid the citizen of a foreign country four times the wages he got at home, we naturally had to increase largely the pay of American citizens whom we wished to get to come to the isthmus This caused a steady increase in wages all along the line During 1904 and 1905 this increase of wages was going on all the time Every time a prominent official died of yellow fever it would cause a stampede in the force We would have to offer inducements to get the old men to come back and to get new men to come in the places of those who would not come back for any inducements If yellow fever had continued, we would still be raising wages on the isthmus This large increase in wages caused a great general improvement in all living conditions — more room to live in, better food and better clothing I am satisfied that to this improvement in social conditions, caused by our high wages, we owe principally our extraordinary improvement in general health conditions It is a health officer's duty to urge forward those measures in his community which will control individual diseases, but my long experience has taught me that it is still more his duty to take that broader view of life which goes to the root of bad hygiene, and do what he can to elevate the general social conditions of his community This, my experience has taught me, can best be accomplished by increasing wages Such measures tend at the same time to alleviate the poverty, misery and suffering which are occurring among the poorest classes everywhere in modern communities At Panama we increased wages by edict of the government But our government got this money by taxing the people of the United States It would have been of little benefit to our laborers if we had increased their wages by 10 cents an hour and then taxed them by 10 cents an hour in order to raise this money

Such would be the result in the United States if we attempted to increase wages here by edict of the government as we did in Panama Such increase would be of no benefit to the laborer

Natural, just and proper wages are just what each man produces, not a cent more or a cent less We can look back in the history of our own country and see that this condition of affairs was approximated in the early settlement of the country A man coming to this country would take up land for which he paid nothing, and his wages were all he produced on that land After a while all the land is taken up and the next man who comes has to work for some one else Later a great many more men come, and these men bid against each other for work, and thus force down wages This has gone on in the United States, and in all other civilized countries, till at the present time all producers get much less than natural wages, that is, what they produce

Can this unfortunate and undesirable condition of wages be rectified?

Suppose an area of land as great in extent, and as fertile in production as the present Mississippi Valley, should tomorrow rise from the bottom of the Atlantic Ocean off the coast of Long Island Suppose the United States should own this island and offer it to its citizens under our present homestead laws Thousands of the citizens of New York would flock there and take up this land These wages would be natural wages Each man would get all that he produced this would be very much in excess of the wages now given in New York All the poverty, sickness and degradation caused at present by low wages would be rapidly ameliorated The man who was so fortunate as to be appointed health officer for this island would in a few years be able to publish the most astounding health reports

It is entirely possible for us to raise from the bottom of the sea just such an island as I have described In every town and county in New York a large part of the lands are unused or only partially used If this large body of unused land could be brought into use, the effect on the health conditions of New York would be exactly the same as would be produced by raising the island I have described

Can these unused lands be brought into use? If these unused lands were taxed to such an extent that the owners would have to use them to the fullest extent in order that they might pay the taxes, is there any doubt as to what the result would be? All unused lands would soon be utilized to their fullest extent The only way of making any profit from them would be to so use them It would be a very losing venture not to use them to their fullest extent

I have been fortunate enough to labor as health officer in a field in which very great health results have been produced, but they would be small as compared with the health results which will be produced by securing for mankind natural wages It stirs my enthusiasm to think of what glorious opportunities are before the young health officer just commencing life I have spent my sanitary life killing tropical mosquitoes, and I hope have thereby benefited my fellowman I would give a good deal to spend another sanitary life in the ranks of the coming generation of health officers doing my share in the fight that is on us, the fight for the greatest of all sanitary measures, natural wages

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Health, Social Service and Government.—The higher ethical standards and the broad humanitarianism which have developed among large masses of the people, in these recent years demand that the health and socal service activities of the government shall be absolutely divorced from politics — Governor Charles S Whitman of New York.

THE HANDWRITING ON THE WALL*

TORALD SOLLMANN, M D
CLEVELAND

In the recent convention of the National Wholesale Druggists' Association, Mr H A Hover of Denver, chairman of one of the committees, referred to the subject of "proprietary" and "patent" medicines in the following words [1]

> I apprehend that sooner or later we will all be up against not only radical state legislation, but national legislation as well, and we might as well forestall drastic action and lend a guiding hand as to the character that legislation shall take on We did it properly and successfully in connection with the legislation on narcotics, and we might as well see the handwriting on the wall in this case
>
> This is an important question, which involves over 50 per cent of our business, and we do agree that there are certain abuses incident to the manufacture and distribution of proprietaries which have grown up and which involve a lot of remedies that we cannot consistently defend, and we might as well lend our aid and start to clarify the situation

It is gratifying that the handwriting should be perceived by important commercial bodies — for the "patent medicine" business is, unfortunately, largely a commercial question

This awakening of the drug trade to the "patent medicine" evil is a most welcome accession to the forces that are working for the protection of the people In the past, it is true, individual voices have been heard in protest, but for many years the drug trade, wholesale and retail, has winked at these evils Too often it has even encouraged them The "patent medicine" business could never have reached its present vast proportions had it not been backed by the silent, and very often by the voiced recommendation of the drug trade These proportions are, indeed, enormous Mr Hover presents statistics showing that proprietary and "patent" medicines constitute over half of the total sales of the wholesale druggist — a little more than all the standard drugs, sundries, appliances and the multitude of things that go to make up the stock of the ordinary drug store The Commission on Proprietary Medicines of the American Pharmaceutical Association, in a report presented this year,[2] estimates that the number of "proprietary medicines" on sale in the United States is from 40,000 to 50,000, exclusive of any "own make" preparations with only local reputation

While the drug trade has been a partner in the growth of this business, and must take its share of responsibility for the abuses, it should not be blamed unduly Many of the evils arose insidiously and were practiced thoughtlessly It is more profitable and more just to rejoice that the conscience of the trade is now awakening, and to extend every aid in the power of our profession to make this awakening effective In particular, we should give credit to the American Pharmaceutical Association for bringing the issue squarely before the pharmacists It remains to be seen whether the association and the pharmacists will follow up this first step whether they are ready to lay the ax to the root of the evil, whether they intend merely to prune a few of the overluxuriant branches, or whether, finally, they will prefer to shut their eyes and minds to the logic of events, and let things drift

Their problem is not an easy or simple one At the first view, it might seem that they had a final remedy in their power They need only refuse to handle "patent medicines," and these would practically go out of existence So drastic an action, however, would not be supported by present public opinion The very fact that these medicines have so large a sale shows that the public wishes to use them, and that the public must first be educated to their evils, before it will wholeheartedly countenance their suppression In the long run, more can be accomplished by fighting against the specific evils of the "patent medicines," than by attempting to suppress "patent medicines" as a class

The drug trade is wisely choosing this path, if its attitude is fairly reflected in the report of the American Pharmaceutical Association commission already referred to This starts with a study of the various detailed problems involved On the basis of this study, the commission has drawn up a set of provisional rules as minimum requirements for an honest "patent medicine" All of these are in the right direction A frank critic, however, must concede that they scratch only the surface of the evil, and promise only a slight palliation, and not a cure The real cause of the evil is only very lightly, one might even say rather tenderly, touched on by the commission, but a further report is promised, and it is to be hoped that this will deal with the fundamental matters more frankly Yet the present report contains interesting material, and deserves careful reading in the original Its main features, however, may be abstracted and discussed

The commission first points out some of the weak points in the stock arguments against "patent medicines"

1 There is a contradiction in the claim, on the one hand, that "patent medicines" are nothing but everyday prescriptions — on the other hand, that they are dangerous and worthless Their defenders are prompt to inquire "why a given mixture should be considered a valuable and efficient remedy when dispensed by or on the order of a physician, and dangerous and worthless when put up in a carton with a printed label and wrapper"

The contradiction is of course easily answered, in fact, the commission furnishes the answer under 4, below

2 So far as pharmacists are concerned, it is pointed out that the condemnation of widely advertised "patent medicines" looks insincere when they recommend their "own make" preparations of similar character They do, indeed, defend the latter as being "nonsecret" In fact, however, their composition is not often divulged to the purchaser It might be added that "own make" preparations really conflict with the tendency of medical practice acts, and will eventually have to disappear when these acts are consistently framed and applied For "own make" preparations would have practically no sale unless they were personally recommended by the vender, and the personal recommendation of drugs is nothing more or less than prescribing

3 While disclaiming against proprietary medicines as a class, pharmacists have not hesitated to stock and sell them, and often to recommend them, individually Physicians who own drug stores have not been any more consistent

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* From the Pharmacologic Laboratory, Western Reserve University School of Medicine

[1] Forty First Annual Meeting of the National Wholesale Druggists' Association, stenographic report, in Oil, Paint and Drug Reporter, Oct 7, 1915, p 37

[2] Report of the Commission on Proprietary Medicines of the American Pharmaceutical Association, Jour Am Pharm Assn, October 1915, p 1148

4 Only minor emphasis has been placed on what the commission rightly considers the greatest evil of the "patent medicine" industry, namely, "the falsity and extravagance with which its products have been exploited" Every one must agree with the commission, that "this is the basic evil of the 'patent medicine' business and the point where it is most vulnerable, and an attack upon this evil needs no argument for its justification"

The commission goes on to say, "Numerous 'patent medicines' are mixtures which have some merit if properly applied in cases for which they are adapted, the evil is not in the remedies themselves but in the method of their exploitation"

This also is true as a theoretical proposition The question that the drug trade itself must attempt to answer is precisely this *Can "patent medicines" be properly exploited?* If so, how?

The commission next takes up the distinction between "proprietary" and "patent" medicines This distinction, it rightly concludes, depends essentially on whether or not the drug is advertised to the lay public, directly or indirectly A medicine that is so advertised is a "patent" medicine, while one that is advertised only to physicians is a "proprietary" medicine The commission points out that if advertising to the laity were prohibited absolutely, the use of proprietary medicines, except under the direction of qualified physicians, would be reduced practically to zero

The commission considers that the problems of proprietary drugs are being properly and sufficiently cared for by the Council on Pharmacy and Chemistry, and that there is no call for the pharmaceutical profession to invade this field

The commission then goes into an extensive consideration of the various questions involved in the "patent medicine" problem On the basis of this, it formulates a set of tentative declarations of minimum requirements which "patent medicines" should meet in order to render them safe in the hands of the general public It is emphasized that these are only provisional and subject to modification These rules are so important that it seems worth while to reproduce them, together with some critical and constructive comments

MINIMUM REQUIREMENTS

1 *Prescription Fakes, Concealment of Proprietary Character*—The preparation must not be named or advertised in such a way as to conceal its proprietary character and lead the purchaser to believe that it is a *simple chemical or vegetable drug* ordinarily purchasable in small quantities instead of a proprietary mixture or substance

This is a protection against a common form of fraud The rule may be endorsed as it stands

2 *Methods of Marketing*—The preparation must be one which is regularly offered to the public through the usual trade channels, i e through regular wholesale and retail dealers in ready-made medicines, and thus subject to inspection by the authorities charged with the enforcement of state food and drug laws

This would facilitate official supervision, especially of intrastate trade, by restricting the sale of medicines to licensed dealers

This will become of material benefit to the public, however, only if these dealers are made legally responsible for their merchandise, for instance, for any misrepresentation, damage caused by the medicine, etc Mere "inspection" will not furnish much protection

With this proviso, the rule may be indorsed

3 *Alcohol Content*—If the preparation contains alcohol, it must be sufficiently medicated to prevent its use as an intoxicating beverage, and in addition to this requirement, the proportion of alcohol present must not be greater than is properly necessary to hold in solution in permanently active condition the essential constituents of the preparation, and to protect the preparation against freezing, fermentation, or other deleterious change

This aims to prevent the use of "patent medicines" as intoxicants As stated in another part of the report, "it seems fair to assume that when the alcohol percentage of a mixture is far in excess of pharmaceutical requirements, it is for the express purpose of making a preparation that will serve as a substitute for beverage liquors"

The rule, however, does not go far enough really to protect the public The present internal revenue regulations cover practically the same field, but they have undoubtedly failed to abolish the abuses This is easily understood, for it is impossible to lay down any hard and fast line as to when an alcoholic medicine is "sufficiently medicated to prevent its use as an intoxicant" No one doubts that medicines containing merely vegetable extractives, such as many bitters, tonics, female remedies, etc, are often taken as intoxicants, even when the consumer does not realize this If they produce the effects of alcohol, they are intoxicants, even when they are not used to the extent of paralyzing the victim

There is but one way of doing away with the abuse of alcohol under the guise of "patent medicines," and that is to prohibit absolutely its sale to the public in this form, for the manufacturer, since he does not know the consumer, cannot guarantee that his alcoholic preparations will not be abused intentionally, or that it will not create an alcohol habit

The rule in its present form sounds well, but to accomplish its professed intent, it should read, "No preparation may contain alcohol"

4 *Content of Habit-Forming Narcotic Drugs*—If the preparation is one which is capable of being used internally, whether recommended for internal use or not, it must not contain cocain nor shall it contain opium or any of its alkaloids or their derivatives, in greater proportions than those specified in Section 6 of the federal law commonly known as the Harrison Act, and it shall also contain other active drugs in such proportion that the use of the preparation will not be likely to create a drug-habit, nor satisfy such a habit when previously existing

This provision is well meant, especially the last clause, that any preparation containing a habit-forming drug must also contain other active drugs in such proportion as to make its use for satisfying the drug habit impossible However, the same insuperable difficulty exists here as in the case of alcohol, namely, that it is impossible to draw a definite line The way to abuse is still open, the occasion still present, just as it is in the Harrison Narcotic Law Are not the frightful dangers of the opium habit greater than the possible benefits of the direct sale of opiates to the public—however much one may try to guard against these dangers? Is it really indispensable to the welfare of the public that disguised opiates should be on sale? What ailments are there that are really benefited by amateur treatment with opiates, and that could *not* be benefited as much or more in less objectionable ways?

5 *Remedies for Children's Use*—If intended for administration to infants or children the preparation must not contain cocain or opium or its alkaloids, or their derivatives in any proportion whatever

This merits unqualified indorsement The only criticism is its restriction to infants and children It should read "The preparation must not contain cocain, opium, etc , in any proportion whatever "

It may also be pointed out that Rule 5 would furnish little protection to children, so long as the sale of opiates, etc , is permitted by Rule 4 The same cough syrups, etc , are used for all ages

6 *Activity of the Preparation, Cautions Against Misuse*—The preparation must be of such character that it will not be liable to endanger life or health when used in accordance with the accompanying instructions, and if the preparation is one which is liable to occasion injury when improperly used or when used to excess, the accompanying literature must bear instructions tending to guard against such improper or excessive use

This provision is intended to diminish the danger from toxic constituents It may be indorsed, with the important addition, "All preparations which may occasion harmful effects, even when used improperly, must be plainly and conspicuously labeled POISON "

7 *Immoral or Illegal Purposes*—The preparation must not be intended for use as an abortifacient or for use for any other immoral or illegal purpose, nor must it be advertised or recommended either directly or indirectly as an abortifacient or for any immoral or illegal purposes

The advisability of this rule is self-evident

8 *Incurable and Contagious Diseases*—The preparation must not be advertised or recommended as a cure for diseases or conditions which are generally recognized as incurable by the simple administration of drugs, or for the cure of contagious or acute diseases the treatment of which properly requires the supervision of a qualified medical attendant

This is the only rule to which the National Wholesale Druggists' Association took exception It is stated in the stenographic report that the reasons for their adverse action will be transmitted to the commission, and it will be very interesting to have these published On its face, the rule seems perfectly fair, and to the public interest Theoretically, it is of course conceivable that some one might discover a drug cure for an incurable disease, and market this as a "patent medicine" Practically, the contingency is too remote for serious consideration If such a discovery were actually made, the inventor should be required to prove that he has found a cure, and if he succeeded in doing so, the disease would no longer be incurable, and his medicine would therefore not come under the provisions of this rule Experience has shown, however, that the requirements for this "proof" should be extremely stringent The rule deserves indorsement as it stands

9 *Conformity to the Federal Food and Drugs Act*—Neither the label on the package nor any of the accompanying literature shall bear or contain any statement in conflict with the misbranding provisions of the Federal Food and Drugs Act.

This is self-evident

10 *Advertising Not Accompanying the Package*—Advertising not accompanying the package shall conform substantially to the statements on the label, carton, or in the accompanying circulars as to the origin, composition or character of the preparation, or concerning its curative or remedial value

This rule is needed to check irresponsible advertising in the newspapers, circulars, etc , which are not readily reached by the present machinery of the law The rule deserves indorsement, but the chances are that it would not be enforced, unless a rather elaborate machinery of supervision were provided

THE SECRET FORMULA

Taking the rules as a whole, as they stand, there can be no doubt but that their enforcement would correct some of the flagrant "patent medicine" evils As has been indicated, they could be modified so as greatly to increase their efficiency Even then, however, they are merely so many plasters to the sore, and as with all kinds of superficial treatment, when we succeed in healing the sore in one place, it is apt to break out in another, until the disease itself is attacked It is questionable, therefore, whether we are not simply wasting time by experimenting with legal plasters, instead of attacking the fundamental fault What, then, is the spring of the "patent medicine" evil? Why is it that the makers of "patent medicines" have been able to deride all past efforts to correct their abuses? Why has it been possible for them to make exaggerated and false claims, such as could not be made in any other line of business? Why have they been able to sell poisons, to foster alcohol and drug-habits, to create imaginary disorders and to prevent the treatment of real diseases, to injure individuals and the community in health, happiness and purse? Why have they been beyond the efficient reach of law and of public opinion?

If the commission seeks a true answer to this question, it will find it in a single word, and in nothing else *secrecy* Until this is corrected, all rules and laws are more or less futile So long as the composition of "patent medicines" is secret, it is impossible to make them subject to any efficient law So long as the composition is secret, the manufacturer has every technical advantage—he is working in the light, the public in the dark You may, it is true, try to meet his older tricks, one by one, you may succeed in making him name his poisons, narcotics or alcohol, you may even prohibit them—provided they are such as you can succeed in isolating from his complex mixture You may legislate against his selling harmful preparations or making untrue claims, but to apply the law, you must prove your contention Here secrecy is a strong, often perfect protection, for to prove the harm or disprove the claims of a complex mixture of unknown composition is a task of such magnitude as to frighten the average prosecutor out of the attempt It would tax the resources of a large scientific and legal institute to bring a dozen of the plainest offenders to task, each year—the thousands of other offenders meanwhile basking in immunity And then, the offender having paid his fine out of a day's or week's profit, need only spend five minutes in making up a new secret formula—and where is the profit to the public?

On the other hand, assume the composition published, and the task of the inspectors becomes, relatively, a pattern of simplicity The composition can be checked, chemically, with infinitely greater ease, when the supposed ingredients are published The claims can be checked much more simply when one can utilize the large amount of data that science has accumulated The "patent medicine" business can be made to travel, as any honest business, on its merits, instead of its imagination

The secret formula, then, is the key to the "patent medicine" evil The commission does not appear to have perceived this clearly, at least, it has not made up its mind It states that it is "by far the most delicate and difficult” phase of the subject — doubtless so, because it is the crux of the situation — and wisely wishes to make sure of its ground before announcing a conclusion. The conclusion will be awaited with great interest, for by it the report of the commission will stand or fall, by it the thinking public will decide whether or not the commission places the public welfare above all other considerations.

There are at present three plans of dealing with the formula question. The first, to permit the manufacturer to keep the ingredients secret, as at present, except for certain specifically stated poisons. Second, the confidential registration of the formula with some government commission, this is the plan in force, or proposed, in England, Canada and New York City. Third, the publication of the formula on the label. By the latter is commonly meant the statement of the active ingredients and their quantities, without requiring the details of the working formula, flavors, menstruum, etc.

The arguments which are made by the opponents of the published formula are, that this would amount to confiscation of the property, that it would do no good to the consumer, and that the formula is no one's business except the owner's.

The real opposition, of course, arises from the apprehension that publishing the formula would hurt the “patent medicine” business. It is urged that the “patent medicine” manufacturers have spent large sums of money on advertising and creating a sale for their products, that, were their formula published, a host of imitators would arise who would claim to produce the same article, and who, having been spared the expense of advertising, could produce it at a lower price and thus drive the original manufacturers off the market. At first view, the argument appears quite reasonable, but on closer examination it is found to have some very weak features. In the first place, there are probably few druggists who do not consider themselves competent to imitate any “patent medicine” that is sold, even though its composition is supposed to be secret, at least, there are very, very few druggists indeed who do not think that they can produce something just as good, if not better. The cry against substitution, which we have heard for all these years, shows that secrecy has not protected against imitation.

It is most doubtful that the imitation would be any greater with the published formula than without it. It has never been demonstrated that the few “patent medicines” that do publish their formulas, such as castoria and the Ayer's preparations, are being imitated to any greater extent than the others. If the manufacturers are really serious in desiring protection against imitation, they could obtain this by patenting their formula — provided this is really original and meritorious — but there, perhaps, is the rub.

While it is not probable that the fears as to imitation need be taken very seriously, it is possible that publication of the formula would hurt the “patent medicine” business in quite another way. It would make it difficult, if not impossible, to advance the many extravagant claims of marvelous cures on which the “patent medicine” business is largely based. It would also undoubtedly greatly lessen the fictitious efficiency of the preparations in actual use. It might no longer be possible to remove or put on fat by the use of a little alum, washing soda or starch. The published formula would furnish a criterion of originality and efficiency, which many “patent medicines” could not withstand. Those that are neither original nor efficient would undoubtedly be hurt in their sale. It is doubtful, however, whether many outside of the “patent medicine” interests would shed tears over this danger. If a business is hurt by enforcing honesty, it is to the public interest that it should be hurt. In short, the publication of the formula would do but little harm, if any, unless there is the intention to defraud.

On the other hand, the published formula would be of some help to the honestly intentioned “patent medicine” manufacturers. In the first place, it would be the most efficient way of meeting the present feeling of the educated public against “patent medicines.” As is pointed out by the American Pharmaceutical Association commission, a given “patent medicine” may be of more or less, sometimes considerable, use in suitable cases. The fundamental objection to “patent medicines” as a class is that it is impossible to judge whether any of them are suitable to any patient, when their composition is not known. The patient often asks his physician whether it is safe for him to continue a “patent medicine” that he has used with apparent benefit, or to try one that has been recommended to him. In such cases, a physician would usually have no objection to humoring the wishes of the patient, provided he could be certain that no harm would result. With the composition secret, it is impossible for him to be certain of the harmlessness. He must, therefore, unqualifiedly prohibit the use.

The second argument in defense is that the publication would do no good to the buyer, because he would not understand the formula anyway. This entirely underestimates the intelligence of the public. Some do understand, and others seek advice. There are very few who would try to remove their fat with a little alum at an extravagant cost if they knew that it was alum. It is rather suggestive that several state laws require the publication of the formula of stock remedies. It can scarcely be contended that the farmer knows something about what “salts” is when giving it to a horse, but has never heard of it when he takes it himself!

The publication will also be of some service to the public in protecting it against a change in formula whenever the price of ingredients advances, or when other reasons prompt the manufacturer. I do not know how often such changes are made, but there is a widespread belief that they are not uncommon. The purchaser is certainly entitled to know when the thing that he buys under a given name is different from what he had formerly bought under the name.

A final argument, and to my mind the most important, is the protection of the public against drugs which may under some circumstances be perfectly harmless, but which may become very harmful under other conditions. One need only remember the dire results that would follow the application of calomel to the eye of a patient who is taking iodid — a frequent constituent of “patent medicines” — without the knowledge of his physician. Perhaps even more common are the instances of oversusceptibility to the effects of drugs. In these cases the patients and their physicians are generally aware that this or that drug should not be used. There are no statistics to show how much damage is done by the consumption of “patent medicines” whose constituents are quite harmless for the average individual, but against which certain people react abnormally, and which would be avoided if the consumer knew the constituents On the other hand, the patient may not know their susceptibility, and finally consult a physician concerning an unusual, obscure and intractable train of symptoms whose cause and cure would be clear the moment that the physician knew the drugs that had been taken

It may be argued, thirdly, that the formula is the property of the manufacturer, that the medicine is likewise his property, and that he can sell it under his own conditions If he chooses to keep the formula secret, and the purchaser does not like this, he need not purchase and no harm will be done If he does purchase, the transaction is strictly between him and the manufacturer, and the business of no one else The fallacy of this "individual liberty" argument has often been pointed out Logically, it would permit and legalize any sort of fraud It is now universally conceded that where the public has not the means of judging for itself, the state can and should step in to afford it protection A law requiring publication of the formula would still leave the formula the property of the manufacturer, and would not at all compel him to disclose it Only, if he wishes to keep the formula to himself, the state will also oblige him to keep the medicine to himself

The proposal to register the formula confidentially with a government body is a sort of middle ground that is supposed to guard the interests of the manufacturer, and protect the public against the grossest forms of fraud and the most marked dangers As a matter of fact, it can do neither satisfactorily It would not effectively protect the manufacturers, because the government commission — itself consisting of several individuals — would often need to call in outside advice to pass on the various claims, etc, made for each medicine, if it were to do its task at all conscientiously One can easily see what chances there would be for the leakage of information Once information had leaked, the much dreaded damage would have been done Who would assess and pay the damages to the manufacturer?

It would not effectively protect the consumer, because a composition that might be harmless for most individuals might be harmful for him, a manufacturer might make claims which the government body might hold to be justifiable in the majority of cases, but which would not be at all justifiable in individual cases The medicine might contain ingredients which are ordinarily not dangerous, but which become dangerous under certain conditions which the government body could scarcely foresee The cost of the medicine might be so extravagant that the individual consumer might consider it as fraudulent, the government body would have great difficulty in drawing a line

Let us not forget that a question is never settled until it is settled right, and that a settlement that is satisfactory to neither party is certainly *not* right

After the American Pharmaceutical Association commission has formulated its final rules, it will still be confronted by the problem of making these effective It may urge their enactment into laws, but until that can be accomplished, it must rely largely on the moral pressure that it can exert Perhaps the "patent medicine" manufacturers will themselves see the light and aid in the reform Or will they put themselves in the position of Belshazzar and his court and wait until sentence has been pronounced?

> They drank wine and praised the gods of gold, and of silver, of brass, of iron, of wood, and of stone
>
> In the same hour came forth fingers of a man's hand, and wrote over against the candlestick upon the plaister of the wall of the king's palace, and the king saw the part of the hand that wrote
>
> Then the king's countenance was changed, and his thoughts troubled him, so that the joints of his loins were loosed, and his knees smote one against another —Daniel, v, 4-6

CARBOHYDRATE INDIGESTION

WILDER TILESTON, M D
NEW HAVEN, CONN

Carbohydrate indigestion is not, strictly speaking, a disease, but a functional disturbance which may occur by itself, or as a complication of disease of the alimentary tract or of other parts of the body Scattered references to faulty digestion of carbohydrates are to be found, under the headings "Gastric Ulcer," "Meteorism," etc, in the current textbooks on diseases of the stomach and intestines, but the subject is, so far as I am aware, nowhere treated as a comprehensive whole Yet the condition is very common and responds readily to a proper regulation of the diet

The discussion will be limited to carbohydrate indigestion in adults, since the condition as it affects infants forms a subject by itself

There are distinct limits to the tolerance for carbohydrates, proteins and fats These limits vary widely in different persons, and in the same person at different times When the amount in the diet of one of these forms of food exceeds the limit of tolerance, then either disturbance of digestion, or of absorption, or both, is the result

Indigestion of various kinds is perhaps more often due to a diet unsuited to the individual than to any other cause The symptoms of carbohydrate indigestion are the result of fermentation, with the formation of various gases, carbon dioxid (CO_2) and methane, (CH_4) etc, and volatile fatty acids For fermentation to take place three factors are necessary (1) the presence of suitable micro-organisms, (2) a proper medium for them to work on, and (3) more or less stagnation of the contents of the stomach or intestine, in order that the organisms may have sufficient time for action A great variety of organisms may give rise to gaseous fermentation, among which the yeasts and various bacteria are the most important Kuhn and Strauss[1] have shown that hydrochloric acid does not inhibit the development of yeast cells Gaseous fermentation is found in the stomach, according to Riegel,[2] especially in cases of dilatation, with normal or increased amounts of hydrochloric acid, though it may occur in the absence of hydrochloric acid In the case of the intestines the colon is the chief seat of gas production, on account of the abundance of micro-organisms and the stagnation of the contents

The exact causes of carbohydrate indigestion remain obscure In the stomach, hyperacidity might be a factor by interfering with the action of the salivary diastatic ferment In the large intestine the presence of undigested or partially digested starch is probably the most important factor, for sugars are invariably absorbed higher up in the canal. The micro-organisms are probably always present and only await a suitable opportunity for their activity.

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[1] Kuhn and Strauss Quoted by Riegel in Diseases of the Stomach, Nothnagel's Practice, Am Ed 1903 p 123

[2] Riegel Diseases of the Stomach, in Nothnagel's Practice, Am Ed p 403

The faulty digestion of starch in the intestine might be due to an insufficiency of the diastatic ferments, or, as A. Schmidt[3] suggests, to a defective digestion of the cellulose which forms the outer envelope of the starch cells, and must be removed to allow the digestive ferments access to the starch within.

SYMPTOMS

The symptoms of intestinal fermentation are chiefly those due to distention with gas. The patients in the milder cases complain only of a sense of fulness or discomfort coming on several hours after meals, and of flatulence. The higher degrees of tympanites are accompanied by colicky abdominal pain, which may be severe, and is relieved by the passage of gas. The seat of the pain varies according to the part of the intestine affected; it may be general, or located in the right iliac region, or the left side of the abdomen. Pain is more likely to occur if there are adhesions which are pulled on, as in the case of distention of the cecum with adhesions from chronic appendicitis. Sometimes the acid products of fermentation irritate the bowel to such an extent that diarrhea results, the so-called "fermentative dyspepsia," of Adolph Schmidt. The movements are then frequent, acid and foamy from the admixture of gas bubbles.

Gastric fermentation gives rise to distention of the stomach, which is relieved by belching. "Heart-burn" is another common symptom in this condition, and one that is relieved by diminishing the amount of carbohydrates in the food. Whether, however, the carbohydrate indigestion is secondary to the hyperacidity, or causes it by the irritating products of fermentation, remains an open question.

DIAGNOSIS

Since abdominal distention is the principal symptom of carbohydrate indigestion, it becomes necessary to consider all the causes of tympanites. These are four, namely, (1) increased gas production; (2) mechanical obstruction of the intestine; (3) the so-called paralytic ileus, or obstruction due to paralysis of the intestine, and (4) deficient absorption of gas from the intestines. Mechanical obstruction can only give rise to doubt in cases of chronic and partial obstruction; here a careful inquiry for previous inflammatory abdominal disease, and examination of the abdomen for tumor, visible peristalsis, and intestinal rigidity (*Darmsteifung*) will usually solve the question, though roentgenoscopy may be necessary before a final decision is reached. In paralytic ileus the symptoms are those of acute intestinal obstruction, usually associated with acute general peritonitis or following an abdominal operation. It is obvious that such a condition does not in the least resemble distention due to fermentation.

Tympanites from decreased absorption of gas is a rare condition, met chiefly in the aged, and presumably due to arteriosclerosis of the mesenteric vessels. The diagnosis can be made, with some reserve, in arteriosclerotic subjects with distention for which no other cause can be assigned.

After the exclusion of other sources of tympanites, that due to increased gas production remains. It is by far the commonest cause of distention. It may be the result of fermentation of either carbohydrates or proteins, but the carbohydrate fermentation is much the more frequent of the two. Therefore it will be allowable in a given case to limit the carbohydrates in the diet, and base the diagnosis on the results of treatment. A more certain opinion, however, can be reached by the examination of the feces. The reaction is perhaps the best single guide, an acid stool pointing to the carbohydrates, and alkalinity to the proteins, as the element at fault. The presence, under the microscope, of undigested starch granules, as shown by the iodin test, is additional evidence of carbohydrate indigestion, while a foul odor points with certainty to the putrefaction of proteins. The presence in the urine of large amounts of indican, or phenol, or both, also indicates increased protein decomposition. The fermentation test of Schmidt[4] is useful, though seldom indispensable. It consists in measuring, by means of a simple apparatus, the gas produced by a definite amount of feces when incubated for twenty-four hours in a thermostat, the reaction being taken before and after incubation. If the reaction becomes more acid, the fermentation involves the carbohydrates; if more alkaline, the proteins.

The fermentative diarrhea of Schmidt is easily recognized by the examination of the stools, which are mushy, acid, mixed with bubbles of gas, and contain undigested starch. Though the movements are increased in number, it is not, strictly speaking, a diarrhea, for the water content is not increased.

When belching is the principal symptom it is necessary to determine whether the gas is swallowed, or formed within the stomach. Cribbing, or the swallowing of air, is to be suspected when there is a history of a very large amount of gas brought up within a short space of time. On watching the patient, swallowing movements may be noted at frequent intervals, and the belching will be prevented by the wearing of a piece of cork between the teeth. If the gas is formed within the stomach, it may be due to simple carbohydrate indigestion or be secondary to obstruction of the pylorus or atonic dilatation of the stomach. The latter conditions may be distinguished by the use of the stomach pump, and of the Roentgen ray. Belching in a fat person is always suspicious of carbohydrate indigestion, for serious disease of the stomach almost always leads to loss of weight.

TREATMENT

The treatment of carbohydrate indigestion is mainly dietetic. It consists in a marked reduction of the total carbohydrate intake, with exclusion of certain articles which are known to undergo fermentation readily. Such are potato, sweet potato, cabbage, beans (except string beans), and chestnuts. The harmfulness of potato in this connection is possibly explained by the work of Lang,[5] who found, in the course of experiments with pancreatic diastase, that potato, though easily changed to achroodextrin, is very slow to undergo the further change into sugar. In obstinate cases, particularly in the fermentative diarrhea of Schmidt, it may be necessary to resort for a while to a strict protein-fat diet, consisting of eggs, meat, fish, bouillon, butter, and tea or coffee with milk or cream. According to Schmidt, a small amount of cane sugar and fruit jellies may be taken in addition to the above After a few days of such a diet, carbohydrates may be added cautiously, one at a time, sugar, cream of wheat, toast or zwieback, macaroni, and rice, in the order named Potato is best left out of the diet for a long time In cases without diarrhea, vegetables of low carbohydrate content, such as carrots, turnips, squash, egg-plant and string beans, are well tolerated from the first They should be sieved and served with butter

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[3] Schmidt, A.: Klinik der Darmkrankheiten, p. 199.

[4] Schmidt, A.: Klinik der Darmkrankheiten, p. 100.

[5] Lang, S.: Ztschr. f. exper. Path. u. Therap., 1910, viii; cited in Furth: Probleme d. phys. u. path. Chem., ii, 216.

If obesity is present, a reduction in the total caloric value of the food should be combined with the limitation of carbohydrates The relief of indigestion is often a welcome by-product of an obesity cure

The results of the dietetic treatment of carbohydrate indigestion are most gratifying, dyspepsia of long standing disappearing in a few days In fact, if relief is not obtained, it is probable that the diagnosis is wrong and some other condition is present

The drug treatment of fermentation will accomplish little by itself When combined with regulation of the diet it sometimes seems to be of benefit, but as a rule it is superfluous The drugs most likely to give relief are the various salicylate preparations and beta-naphthol Belching can be facilitated by the administration of the ethereal oils, such as peppermint, or menthol in half-grain doses Diastatic preparations are occasionally of service

The following cases, all of which occurred in private practice, may serve to illustrate the foregoing statements

Case 1—M M, an unmarried woman, aged 67, was first seen Oct 1, 1914 Her past history was not remarkable except for a tendency to nervous prostration She had suffered from indigestion all her life, usually in attacks lasting from two to six weeks The chief symptom had been distention with gas, coming on two or three hours after eating, and causing a good deal of distress, sometimes enough to keep her awake at night When very uncomfortable she resorted to enemas to remove the gas The physical examination was negative except for gurgling on palpation over the intestines The feces were neutral in reaction, and were negative microscopically except for an excessive number of yeast spores The treatment consisted in a protein-fat diet, with a small amount of carbohydrate in the shape of sieved green peas and apple sauce A powder containing beta-naphthol, soda and bismuth was given after meals The result was prompt relief Three weeks later she reported that there had been very little gas though she had left off the medicine some time before Fruits once a day, nuts and ice-cream were then added to the diet At her next visit, November 6, she was feeling very well She was told she could eat rice, and after December 3, all vegetables except potato She reported by letter July 7, 1915 In the spring she had two short periods of indigestion lasting two days or less, since then she has been free from symptoms except an occasional feeling of abdominal discomfort

Case 2—Mrs D K, aged 43, was seen Jan 14, 1915 Her past history was negative For the past eleven years she had had frequent pains in the left iliac region associated with distention There was a constant dull pain there with acute exacerbations in which the pain radiated upward toward the left costal margin Examination showed a moderately obese woman, weighing 160 pounds, the viscera were negative except that the sigmoid was palpable The feces were slightly acid in reaction, and showed a few undigested starch granules On a diet low in carbohydrates she was soon relieved, and on February 3 reported that she had had pain only once in the last fortnight During the following week she had no pain On inquiry, June 26, 1915, she stated that she had been free from pain on a slightly restricted diet, except for a few occasions when she had taken more carbohydrate than usual

Case 3—Mrs R, aged 56, had been getting stouter for two years owing to lack of exercise following the death of her pet dog There was a good deal of heart-burn and gas in the stomach Under a simple antiobesity diet these symptoms promptly disappeared

Case 4—This patient was a very fat cook who complained of incessant belching The appetite was good but she was afraid to eat on account of the distress afterwards Complete relief followed restriction of the carbohydrates and of the total food intake

Case 5—C C, a college professor, aged 48, complained of distention from gas after meals, especially if he used his eyes directly after dinner Examination showed slight obesity, and the abdomen somewhat distended The stool was slightly acid, and contained many gas bubbles, and undigested starch granules The treatment consisted of a mild reduction cure with low carbohydrates A week later he reported that since changing his diet he had not been at all annoyed with indigestion Carbohydrates were gradually added to the diet without a return of the symptoms On inquiry six months later he said that he had remained well though on an ordinary diet

Case 6—This case illustrates the so-called fermentative dyspepsia of A Schmidt Mr S, aged 53, had been under treatment for the past few years for vague neurasthenic symptoms and for chronic prostatitis He complained of diarrhea of three months' duration The stools were two or three a day in number, and were mushy, not watery Examination showed a rather stout man, with nothing remarkable except the character of the stools, these were brown, soft, not formed, full of gas bubbles Microscopic examination showed numerous undigested starch granules He was put on a protein-fat diet consisting of eggs, meat and butter, with a small amount of carbohydrate in the shape of gluten-biscuit and tomatoes No drugs were prescribed A week later he reported considerable improvement, the bowels moving only once or twice daily, the stool partly formed He was told to add three slices of toast to his diet, and to take a teaspoonful of a diastatic ferment preparation after meals During the following week the movements dropped to one a day, and became formed and of normal appearance Carbohydrates were restored gradually to the diet list and no relapse took place

424 Temple Street

ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN

AND WITH TOXIN-ANTITOXIN COMBINED WITH DIPHTHERIA BACILLI — SECOND PAPER

LATE RESULTS *

WILLIAM H PARK, M D
AND
ABRAHAM ZINGHER, M D
NEW YORK

The property of diphtheria toxin-antitoxin mixtures to produce immunity in animals has been known for a number of years Successful results have been obtained in the immunization of horses (Park, 1902), goats, guinea-pigs, etc Theobald Smith suggested the immunization of children by this method, but no one undertook it until 1912, when von Behring made the attempt

In May, 1913, von Behring[1] reported the results obtained in human beings with mixtures of diphtheria

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* Read before the New York Pathological Society, Oct 13 1915

* From the Research Laboratory and the Willard Parker Hospital New York City Department of Health

[1] Von Behring E Ueber ein neues Diphtherieschutzmittel, Deutsch med Wchnschr, 1913, xxxix, 873

toxin-antitoxin The combined substances were either neutral or slightly toxic to the guinea-pig, but the definite proportions of toxin and antitoxin were not stated The early reports of von Behring and his co-workers[2] were so favorable that we determined to make a similar attempt at the Willard Parker Hospital The scarlet fever pavilion offered us exceptional opportunities to determine the efficiency of this prophylactic treatment against diphtheria

Mixtures of diphtheria toxin and antitoxin were accordingly prepared in such proportions that they were either overneutralized (50 per cent of the L + dose of toxin to each unit of antitoxin), just neutral (from 66 to 70 per cent of the L + dose of toxin to each unit of antitoxin), or slightly toxic to the guinea-pig (from 80 to 90 per cent of the L + dose of toxin to each unit of antitoxin)

Several series of patients were injected with these mixtures during the past two and one half years Our first communication[3] in September 1914, gave the results which we had obtained within from four to six weeks after the injections of toxin-antitoxin From the available results at that time we concluded that the cases injected could be divided into two sharply differentiated groups

1 Those who had a natural antitoxic immunity produced a very decided increase in the amount of antitoxin after injections of toxin-antitoxin The response was very prompt and followed even after a single injection These individuals were, however, naturally immune even before the injections, and needed no further immunizing injections

2 Those who had no natural antitoxic immunity and were therefore probably susceptible to diphtheria gave entirely different results An early response (within from four to six weeks after the injections) to the active immunization was noted in only 25 to 30 per cent of the injected individuals The examination of the blood serum of these patients for antitoxin showed the presence of from one-tenth unit to 10 units per cubic centimeter Among those who did not definitely respond, however, a number gave a fainter Schick reaction[4] than the control test made before the injections of toxin-antitoxin This showed that at least a trace of antitoxin had developed in the cells and had accumulated in the blood This was not sufficient, however, to suppress the Schick reaction When we retested these individuals from six to eighteen months later, a large proportion now gave a negative Schick reaction and were thus found to have finally become immune

This late development of antitoxin is interesting in connection with observations which we had made with the Schick test in patients who had had diphtheria some weeks previously Among these we noted that fully two thirds still gave a positive reaction, thus indicating in these a failure to develop an antitoxic immunity within the period noted after one attack of the disease These figures correspond closely with the ones showing the early results of active immunization with toxin-antitoxin An interesting observation, however, was made in this connection when our chronic tube cases were tested who had had diphtheria eight months or more previously Nearly all gave a negative Schick reaction This may have been due to a late development of antitoxin or to the fact that the cells only slowly yielded up to the blood the antitoxin formed in small amount soon after the infection A few of these patients may have been subject to recurrent infections with the diphtheria bacillus There was, however, no proof of this In a group of four cases, for instance, in which a positive Schick reaction had been shown after an attack of laryngeal diphtheria, the gradual development of a permanent antitoxic immunity could finally be traced during the succeeding twelve months In another patient, who had developed an immunity soon after the disease, a persistent negative Schick reaction was obtained during the entire period of observation

These suggestive findings led to the conclusion that, while the immediate results of attempts at active immunization with toxin-antitoxin were disappointing, later ones obtained by retesting the immunized individuals without further injections might give a much better showing We therefore determined to follow up and retest, from four to eighteen months after discharge from the hospital, as many of the injected children as possible This tardy development of immunity in man is not unexpected, for it is a well-known fact that immunization of certain animals, like guinea-pigs, with diphtheria toxin alone or with the toxin-antitoxin mixture, is a slow process It almost seems that in some persons there is not only the absence of antitoxin but also some substance which destroys the first traces of antitoxin entering the lymph and blood so that some time elapses before an excess of antitoxin becomes apparent in the circulating blood The considerable success already noted of the tests of persons, some months after the toxin-antitoxin injections, led us to continue the work, and also to vary somewhat the methods employed with the hope of getting even better final results As is well known, diphtheria has shown during the past decade little decrease in morbidity, the mortality of the disease, however, has been greatly lowered by the early administration of antitoxin The problem, therefore, of an efficient method of active immunization in schools, asylums, hospitals and in the homes remains of great importance By means of the Schick test we can detect the susceptible individuals, and control in a simple and yet accurate way the results of the active immunization

The individuals who were retested with the Schick reaction to determine a late development of an antitoxic immunity can be divided into three groups The early results in Groups 1 and 2 may be summarized in Table 1

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[2] Following is a list of these reports
Hahn B Ueber Antikorperbildung bei Diphtherie Experimentelles und Klinisches Verhandl d Deutsch Kong f Inn. Med Wiesbaden 1913 xxx 460
Schreiber, E. Zur Prophylaxe und Therapie der Diphtherie, Deutsch. med Wchnschr 1913 xxxix 928
Zangmeister W Dritte Mittheilung uber von Behring s neues Diphtherieschutzmittel Die Anwendung des neuen Diphtherieschutzmittels in der Marburger Frauenklinik, von Behring Anhang Deutsch. med Wchnschr 1913 xxix 977
Kleinschmidt and Viereck Vierte Mittheilung uber Behring's Diphtherievakzin Deutsch med Wchnschr 1913 xxxix 1977
Kissling K. Funfte Mittheilung uber von Behring's Diphtherievakzin Deutsch med. Wchnschr 1913 xxxix 2500
Hahn B and Sommer Γ Praktische Erfahrungen mit dem Behringschen Schutzmittel gegen Diphtherie Deutsch med. Wchnschr 1914 xl 13
Bauer J Ueber *die Prophylaxe der Diphtherie* nach von Behring Deutsch med Wchnschr 1914 xl 582
Von Behring and Hagemann Ueber das Diphtherie Schutzmittel 'T A. Von Behring Aufgaben und Leistungen meines neuen Diphtherieschutzmittels Hagemann Ueber von Behrings neues Diphtherie-Schutzmittel Berl klin Wchnschr 1914 lix 917

[3] Park William H Zingher Abraham and Serota Harry M Active Immunization in Diphtheria and Treatment by Toxin Antitoxin The Journal A. M. A. Sept 5 1914 p. 859

[4] Schick B Spezifische Therapie der Diphtherie Centralbl f Bacteriol 1 Abt. 1913 lvii Ref Beiheft, 16 Die Diphtherietoxin Hautreaktion des Menschen als Vorprobe der prophylaktischen Diphtherieheilseruminjection Munchen. med Wchnschr 1913 lx 2608. Park W H Zingher Abraham *and Serota Harry M* The Schick Reaction and Its Practical Applications Arch Pediat. 1914, xxxi 481 Park W H and Zingher Abraham Practical Applications Obtained from the Schick Reaction Proc. New York Path Soc October, 1914

In Group 1, sixty-eight patients were actively immunized No Schick reactions were made at the time, but for the sake of uniformity the results are stated in terms of positive or negative reactions The patients in this group were bled before and after immunization and the results determined by the examination of the serum for its antitoxin content

TABLE 1—EARLY RESULTS IN GROUPS 1 AND 2

Persons Injected		Reactions	About Four Weeks Later	Number Developing Diphtheria
Group 1	68	44 —	44 —	0
		24 +	6 —	0
			18 +	5
Group 2	90	90 +	20 —	0
				0
			70 + or ±	17

In this table, — = no reaction to toxin, and indicates presence of antitoxin, + = marked reaction to toxin, and indicates very little or no antitoxin, ± = moderate reaction to toxin, and indicates slight amount of antitoxin

Of the sixty-eight patients in Group 1, forty-four had natural antitoxin, and all gave a decided increase in antitoxin content after the injections, none developed diphtheria Of the remaining twenty-four patients who had no perceptible natural antitoxin, six gave rise to antitoxin production, while eighteen failed to respond Of the six no one, and of the eighteen five developed clinical diphtheria

Since the crucial value of the treatment lay in its efficiency to protect the susceptible individuals, we selected for immunization in Group 2 a larger series of cases which had no natural immunity, as shown by blood examination for antitoxin and by a positive Schick reaction Of the ninety injected patients, twenty responded to the injection of toxin-antitoxin with the production of sufficient antitoxin to protect against diphtheria, seventy failed to respond, though some gave a fainter Schick reaction than they had shown before the immunization Among the twenty, no cases of diphtheria developed, of the seventy who produced very little or no antitoxin, seventeen developed clinical diphtheria twelve days and more after the first injection

TABLE 2 —EARLY AND LATE SCHICK TESTS IN GROUP 2

Number Retested	Within Four Weeks	One to 1½ Years Later
16 +	5 —	5 —
	11 +	6 —
		4 ∓
		1 ±

In this and the following tables — indicates negative Schick reaction, ∓ faint, ± moderate, and + fully developed Schick reaction

From Group 2, sixteen cases were subsequently retested from one to one and one-half years after the injections of toxin-antitoxin (Table 2)

Five of the sixteen who had shown an early and decided production of antitoxin again gave a negative Schick reaction Of the eleven who had failed to respond at first to the immunizing injections, six now gave a negative, four a very faint and only one a positive Schick reaction

Group 3 consisted of 158 patients (Table 3) who had originally given a positive Schick reaction These patients were immunized with a mixture of toxin-antitoxin and a vaccine made of killed diphtheria bacilli Three or four subcutaneous injections were given at intervals of from three to four days, each injection consisting of 1 c c toxin-antitoxin (85 per cent L + dose of toxin to each unit of antitoxin), and 1,000,000,000 bacteria One c c of the mixture injected subcutaneously into a guinea-pig produced a slight local induration and paralysis in ten days

Local and general reactions were noted in about half of the injected individuals They were, as a rule, more frequent and more marked in the older children and in adults than in the young children These reactions are due in part to the slight excess of free toxin, and in part to the protein substance of the diphtheria bacilli, the more toxic mixtures will give, however, more severe reactions

Local reactions consisted of pain, redness, some induration and local tenderness at the site of injection The lymph glands in the axilla were not involved General reactions consisted of a temperature between 100 and 102 F and slight malaise The local signs appeared within twenty-four hours, lasted for another twenty-four hours, and then gradually disappeared The temperature continued, as a rule, only for one day, in some, for two days In no case have any serious effects appeared

TABLE 3—EARLY RESULTS IN GROUP 3 (158 CASES) WITH NO ANTITOXIN (+ SCHICK) BEFORE IMMUNIZATION

Number Injected	Within Four Weeks	Number Developing Diphtheria
158 +	56 —	0
	9 ∓	0
	83 ±	0
	10 +	4

Of the 158 injected patients, fifty-six, or 35 5 per cent, produced enough antitoxin within four weeks to give a negative, and 9, or 6 per cent, a very faint Schick reaction Of those who were partly or totally refractory, eighty-three, or 52 per cent, gave a moderately positive, and ten, or 6 5 per cent, a strongly positive Schick reaction Of the ten, four developed clinical diphtheria

To note any late development of immunity, we retested, from two to five months after the injections, fifty cases of this group (Table 4)

Ten of the patients who had given a definite early production of antitoxin continued to show a negative Schick reaction Of the thirty-six patients who had produced only a trace of antitoxin, sufficient only to inhibit slightly the Schick reaction, twenty-six now gave a negative, four a very faint and six a moderately positive reaction The remaining four who showed no antitoxin production at first, now gave a negative Schick reaction

TABLE 4—EARLY AND LATE SCHICK TESTS IN GROUP 3

Number Injected	Within Four Weeks	Two to Five Months Later
50 +	10 —	10 —
	36 ±	26 —
		4 ∓
		6 ±
	4 +	4 —

Grouping together the early and late successful results in this series of cases, we find that forty out of fifty susceptible individuals had developed an antitoxic immunity after the injections of toxin-antitoxin plus vaccine The remaining ten gave a reaction which was moderately positive in six and faintly positive in four cases These cases probably had also developed some bactericidal immunity from the bacilli injected

In addition to these, we also immunized with toxin-antitoxin a series of sixteen normal children (Group 4) who had given a positive Schick reaction These children were injected about a year ago, and retested with the Schick reaction four and eight months after the immunization (Table 5)

TABLE 5 —EARLY AND LATE SCHICK TESTS IN GROUP 4 (NORMAL CHILDREN)

Number Injected	Within Four Weeks	Four Months Later	Eight Months Later
16 +	4 —	4 —	4 —
	10 +	5 —	5 —
		5 +	4 —
			1 +
	2 ∓	2 —	2 —

Within four weeks after the injections, only four or 25 per cent, gave a negative Schick test Four and eight months later, these four still gave a negative reaction, thus indicating a probable lasting immunity Ten children who produced no antitoxin at first now showed the following interesting results At the end of four months, five gave a negative and five a positive Schick reaction At the end of eight months, nine showed a negative Schick reaction and only one was still positive Two of the sixteen children who had given a partial early response were found immune at the end of four and eight months

Sixteen months later, eight of the actively immunized children were retested Seven of those, who had become immune at the end of eight months, were found to be still protected, while the one who proved resistant again gave a positive Schick reaction

In the same institution, we also retested after sixteen months a number of normal children who had not been injected with toxin-antitoxin Table 6 gives the results of all the retests

The table shows that of fourteen negatively reacting children between the ages of 5 and 15 years, when retested after sixteen months, two gave a positive, but twelve still showed a negative reaction Of eighteen originally positive Schick cases, three were now negative while fifteen were still positive It is interesting to compare with these eighteen the group of eight children who had been actively immunized with toxin-antitoxin, their retests showed that a much larger proportion had become immune than could be accounted for by the time factor alone

TABLE 6—RESULTS OF ALL RETESTS

Date	Not Immunized		Immunized
June, 1914	14 —	18 +	8 +*
October 1915	12 —	3 —	7 —
	1 +	15 +	1 +
	1 ±		

* Toxin-antitoxin.

From the retests in the naturally immune children in this series and in a larger one at present under observation by us, the rather important fact may be deduced that a great majority of children of school age, who show a negative Schick reaction, probably remain protected for years, and even for life *Such persistent* immunity, as shown with the test, could be successfully utilized in schoolchildren During an outbreak of diphtheria among children previously tested, it would be necessary to immunize with antitoxin only the susceptible children Class work could then continue without interruption

Our results in active immunization up to the present time have led us to the conclusion that, while the toxin-antitoxin injections cannot be depended on to prevent diphtheria in the presence of immediate danger of infection because of the slow development of immunity in a majority of the cases, yet the injection is of value in rendering a community or school population immune to the danger of infection from future exposure up to a period of possibly several years

The Research Laboratory will supply those connected with institutions, who are interested in the subject of active immunization against diphtheria, and are willing to furnish us a report of the cases, diphtheria toxin for the Schick test and a mixture of diphtheria *toxin-antitoxin* for immunization

The reports should include

1 The character of the Schick reaction before the injections and at the following intervals after the last injection three weeks, six weeks, three months, six months, one year and two years Pseudoreactions are to be carefully controlled

2 The number of *injections made* The dose recommended is 1 c c, injected three times at intervals of seven days The injections are made subcutaneously in the arm over the insertion of the deltoid The dose is the same for individuals from 1 year to adult life Infants below the age of 12 months receive 0 5 c c with each injection

3 The character of the local and general reactions, if any, after each injection

4 A description of the clinical cases of diphtheria which develop among the injected individuals during the course of immunization or afterward Culture reports for the Klebs-Loeffler bacillus, etc

5 Where possible, a quantitative estimation of the amount of antitoxin developed as a result of immunization

The following groups of individuals are recommended for active immunization (only positive Schick cases to be injected)

(*a*) Children in schools and orphan asylums

(*b*) Mothers and infants in lying-in places

(*c*) Physicians, nurses and ward workers in contagious disease hospitals

(*d*) Patients in general and contagious disease hospitals

CONCLUSIONS

1 Individuals who, before treatment, give a negative Schick reaction are immune probably for life and, therefore, it is not necessary to inject them, when exposed, either with antitoxin or toxin-antitoxin

2 Those who give a positive Schick reaction and are exposed to diphtheria and in immediate danger should receive either antitoxin alone or, if a longer protection is desired, both antitoxin and toxin-antitoxin

3 For the general prophylaxis against diphtheria in schools and communities, excluding immediate contacts, a mixture of toxin-antitoxin alone (from 85 to 90 per cent of the L + dose of toxin to each unit *of antitoxin) or toxin-antitoxin* plus vaccine of killed diphtheria bacilli is recommended The dose is 1 c c of toxin-antitoxin and 1,000,000,000 bacteria injected

subcutaneously and repeated three times at intervals of six or seven days Sufficient time has not as yet elapsed to judge the value of adding the injections of the bacilli to the toxin-antitoxin

4 The early and the late results of active immunization should be determined with the Schick test Early results are those obtained by the application of the test within four weeks, and late results from four months to two years after the immunizing injections

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EFFECT OF MODERATE DOSES OF SOME OPIUM DERIVATIVES ON GASTRO-INTESTINAL TRACT OF MAN *

PRELIMINARY REPORT ON ROENTGEN STUDIES

HENRY K PANCOAST, M D
AND
ARTHUR H HOPKINS, M D
PHILADELPHIA

This work was undertaken as the result of the observations of one of us (Pancoast[1]) on the gastro-intestinal motility of a patient who had a hypodermic of morphin several hours before the Roentgen studies were made There was found not only an hour-glass constriction of the stomach, but also a striking retardation of the motility of the small intestine Control studies on this patient at a later date, and when freed from the influence of morphin, revealed no such abnormalities

The earliest investigations in which the Roentgen rays were utilized in the study of the action of opium and its derivatives on the gastro-intestinal tract were those in which animals, especially dogs and cats, were utilized These studies frequently revealed, not only a retention of the bismuth meal in the esophagus for a period of one-half hour, but also a retention, even for hours, in the fundus and not the pylorus of the stomach, owing to a constriction in the region of the pyloric antrum Intestinal motility was less influenced than gastric, and that of the large intestine less than the small (Magnus[2]) Later studies were made on the action of magnesium sulphate and colocynth with succeeding observations on the effect of morphin and opium administered shortly after the above-mentioned cathartics Magnesium sulphate caused a delay in gastric motility, but an acceleration of motility of the small intestine and colon, while morphin was found to check this activity only by means of further delaying the passage of the meal from the stomach to the bowel Colocynth produced first an increased gastric motility and then a delay The motility and secretion of the small intestine and the motility of the large was increased Morphin and opium checked the diarrhea by checking the activity in the small and large bowel, the tincture of opium being especially active in lessening the watery exudation (Padberg[3])

The work of Muller and Saxl,[4] in which the capacity of the stomach of dogs was estimated, not by the roentgenogram, but by a gastric fistula and the introduction of varying amounts of water, showed that the capacity was almost doubled in narcotized animals, morphin being especially effectual, then chloroform, then chloral hydrate and finally local anesthetics, as anesthesin Atropin produced a moderate relaxation, while epinephrin was ineffectual

More recently a few studies have been made of the influence of the opiates on the human gastro-intestinal tract as revealed by the roentgenogram Morphin was given by mouth and subcutaneously in varying doses In some instances, small doses increased peristalsis in the pyloric region, while moderate doses caused a constriction of the pyloric sphincter and occasionally an hour-glass constriction With large doses, the results were even more pronounced Very similar results were derived from the tincture of opium (van den Velden[5])

In nervous diseases of the "vagal neurosis" type, small doses were ineffectual Moderate doses, especially in young, nervous females, caused a prolongation of the emptying time of the stomach The emptying time of the small intestine was prolonged in all cases (Arnsperger[6]) Stierlin and Schapiro,[7] after similar studies, emphasize the influence of moderate doses of morphin on the retardation of the emptying time of the stomach in young people, in contrast to that of adults, the latter frequently being uninfluenced. In two cases of hypermotility, the emptying time was more rapid after morphin In over half of their series, the motility of the small intestine was retarded while the large intestine was but slightly influenced In chronic diarrheic enteritis, opium was found to retard the hypermotility of the small intestine

Quite recently, the roentgenogram has been used in the study of gastro-intestinal motility following the administration of various purgatives, the more important observations being those of Meyer-Betz and Gebhardt,[8] who used senna, jalap, calomel and salines, and Katsch,[9] who gave atropin, pilocarpin and epinephrin

We realize that our work so far is very incomplete, and this is offered only as a preliminary report on a subject we hope to follow and cover more conclusively during the next year It is based on careful examinations of twelve persons, including the one previously reported, to whom morphin was given, and one drug habitue who was permitted to resume the use of heroin for one day It has been possible to study these cases only when time would permit during the infrequent less busy intervals of full clinical and Roentgen laboratory hours Moreover, the cost of such research is a factor that has to be carefully considered Our studies have required 157 fluoroscopic examinations and the making of 170 roentgenograms

With the exception of the heroin case, a control series of examinations was made to check up each drug series at exactly the same intervals The corresponding plates were then studied side by side, together with the fluoroscopic notes We fully realize that

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* From the Roentgen Laboratory and Medical Wards of the Hospital of the University of Pennsylvania

[1] Pancoast Henry K Possible Effect of Morphin on Intestinal Motility, Am Jour Roentgenol December, 1914

[2] Magnus Die Stopfende Wirkung des Morphin, Arch f d ges Physiol (Pflüger's) 1907, München med Wchnschr, 1907, No 29

[3] Padberg J H Der Einfluss des Magnesium sulfats auf die Verdauungsbewegungen, Arch f d ges Physiol (Pflüger's), 1909, No 129, p 476, Der Einfluss des Koloquinten Dekokts Verdauungsbewegungen ibid, 1910, No 134, p 527, Ueber die Stopfwirkung von Morphin und Opium bei Koloquin Durchfallen, ibid, 1911, No 139

[4] Müller, A, and Saxl Der Einfluss von Arzneimitteln auf Tonus und Kapazitat des Magen, Verhandl d deutsch Kong f inn Med, Wiesbaden, 1910, No 27, p [illegible]

[5] Van den Velden, R Verhandl d deutsch Kong f inn Med, Wiesbaden, 1910, No 27

[6] Arnsperger The Effect of Morphin on the Motor Function of the Gastro Intestinal Canal of Man, Verhandl d deutsch Kong f inn Med, Wiesbaden, 1910, No 27

[7] Stierlin and Schapiro Die Wirkung von Morphium Opium, Pantopon auf die Bewegungen des Verdauungstrakus beim Menschen und beim Tierschen, München med Wchnschr, 1912, No 50, p 2714

[8] Meyer Betz and Gebhardt, T Rontgenuntersuchungen uber den Einfluss der Abfurmittel auf die Darmbewegungen des gesunden Menschen, München med Wchnschr, 1912, No 33, p 1794, ibid 1912 No 34, p 1861

[9] Katsch Physiologisch pharmacologisches über Darmbewegungen und Darmform Röntgenkongress, Berlin, 1913

many cases would vary to a certain extent in two or even more control examinations, and also if more than one drug series were studied, and it is only by dealing with a large number of cases and selecting points of resemblance or widely different effects for tabulation that dependable data of any value can be obtained

RESULTS OF STUDY

An abstract of the results of study in each case follows

Case 1 — *Clinical Condition of Patient* — Aortic regurgitation

Medication—Digitalis and gentian, withdrawn during days of examination

Condition of Gastro-Intestinal Tract by Control Examination—Normal except slight colon stasis

Method of Administration of Morphin—Hypodermic injections, one quarter grain with first meal and one-quarter grain seven hours later

Effect on Stomach—Apparently none

Effect on Small Intestine—A slight but definite delay in motility as indicated by the relative position of the column in the lower ileum

Effect on the Large Bowel—(*a*) At the end of eight hours a definite but moderate relative slowing of the opaque column and probably more than could be accounted for by the lessened motility in the small bowel (*b*) At the end of twenty-one hours and later there was no difference from the control

Case 2—*Clinical Condition of Patient*—Gastric neurosis

Medication—None

Condition of Gastro-Intestinal Tract by Control Examination—Stomach negative, very slight delay in the terminal ileum due to incompetency, extreme colon stasis

Method of Administration of Morphin—Single dose hypodermic injection one-quarter grain with first meal (six hours before examination)

Effect on Stomach—Motility slightly increased throughout the time of examination, peristalsis slightly but definitely more vigorous, emptying time definitely shortened

Effect on the Small Intestine—At first a slight relative delay, indicated by the position of the column in the lower ileum Later as the second meal reached the intestine, there was a very decided delay in the jejunum

Effect on the Large Bowel—At the end of ten hours there was practically no difference from the control At the end of forty-five hours stasis was slightly accentuated

Case 3—*Clinical Condition of Patient*—Pyorrhea alveolaris and facial neuralgia

Medication—None

Condition of Gastro-Intestinal Tract by Control Examination—Stomach negative, slight ileal stasis moderate colonic stasis

Method of Administration of Morphin—Continued administration twenty-four hours hypodermic injections one-quarter grain with first meal one-quarter grain ten and one half hours later and one-quarter grain at the end of twenty-four hours

Effect on Stomach—Motility peristalsis and emptying time not appreciably affected

Effect on Small Intestine—The first dose caused no delay but on the other hand the column kept ahead of the control the second dose caused a slightly lessened motility in the upper small bowel which became less marked as the effect wore off

Effect on the Large Bowel—No delay from the first dose the column keeping ahead of the control, the repeated doses caused a decided delay over the control

Case 4—*Clinical Condition of Patient*—Infectious polyarthritis and oral sepsis

Medication—None

Condition of Gastro-Intestinal Tract by Control Examination—Negative except an extreme colonic stasis Inability to empty the large bowel after the control examination rendered it impossible to use this case further

Case 5—*Clinical Condition of Patient*—Possible pituitary neoplasm

Medication—Cannabis indica stopped during examination

Condition of Gastro-Intestinal Tract by Control Examination—Stomach showed varying motility, at times hypermotility but without hyperperistalsis Emptying time was delayed beyond six hours Otherwise negative

First Series *Method of Administration of Morphin*—Single hypodermic injection one quarter grain with meal

Effect on Stomach—Motility and peristalsis were not studied No residue in six hours whereas there was a decided one in the control examination

Effect on Small Intestine—None, unless a slight increase in motility

Effect on Large Bowel—Very slight relative delay in the head of the column

Second Series (the following day after enema) *Method of Administration of Morphin*—Hypodermic injections one-quarter grain one and one-half hours before meal and one-quarter grain two and one-half hours after meal

Effect on Stomach—The same hypermotility as during the control but peristalsis was markedly increased Emptying time prolonged considerably beyond control The hypermotility caused a decided overcrowding of the duodenum

Effect on Small Intestine—A decided delay in the duodenum with a large cap shadow which remained large after the stomach was about empty There was also delayed emptying of the third portion and a slight stasis throughout the small bowel

Effect on Large Bowel—Very slight relative delay over the control, more marked early when the drug was active

Case 6—*Clinical Condition of Patient*—Chronic pulmonary abscess

Medication—None

Condition of Gastro-Intestinal Tract by Control Examination—Negative except slight colonic stasis

Method of Administration of Morphin—Repeated doses by mouth, one-quarter grain one and three-quarters hours before meal one-sixth grain the same time after meal and one-sixth grain eight hours after meal for colonic effect.

Effect on Stomach—Motility A decided tendency to pyloric spasm especially early Peristalsis Marked hyperperistalsis, especially early and far more vigorous than during control One decided antiperistaltic wave Emptying time Delayed about two hours probably because of spasm

Effect on Small Intestine—Slight stasis in the upper portion and a decided relative ileal stasis

Effect on Large Bowel—A decided relative delay in the head of the column while the drug was active, but little if any delay later

Case 7—*Clinical Condition of Patient*—Heart case

Medication—Digitalis discontinued during examination

Condition of Gastro-Intestinal Tract by Control Examination—Stomach showed delay in emptying beyond eight hours Slight colonic stasis

Method of Administration of Morphin—Closely repeated doses by mouth one-quarter grain one and three-quarter hours before meal one-sixth grain one and one-quarter hours after and one-sixth grain three hours after

Effect on Stomach—Motility about the same as control, peristalsis more vigorous in the pyloric portion and continued so with deep segmenting waves, emptying time decidedly prolonged by the repeated doses although motility was ample after the first dose indicating spasm

Effect on Small Intestine—In upper portion a delay only after the third dose A slight delay as noted by the column in the lower ileum, for which the stomach was partly responsible

Effect on Large Bowel—Very little delay as the drug was given early

Case 8—This case deserves special mention because of its unusual interest from the clinical standpoint and because many of the unusual phenomena noted were similar to those observed in connection with the morphin case previously reported.[1]

Clinical Notes on Case.—Drug habitue, addicted to the use of heroin especially, and also cocain. Had been off heroin for two and one-half months. Was admitted because of the drug habit and his general condition resulting therefrom. No medication.

Condition of Gastro-Intestinal Tract by Control Examination.—No examination was made.

Method of Administration of Drug.—Six doses of heroin hydrochlorid, one-sixth grain, given the day before the examination by mouth every third hour. Following this a diarrhea started at night.

Notes Made at the Examination.—The first fluoroscopic examination was made directly after the administration of the opaque meal, without other food. The stomach showed a complete hour-glass constriction at about its middle portion and the appearance was similar to that observed in the previously reported morphin case.[1] This relaxed gradually but not completely, and as it relaxed, there was a tendency to hypermotility without any visible peristalsis (as observed also in the morphin case), and the entire duodenum became overfilled without the passage of any opaque material further. The noteworthy features were the early hour-glass constriction followed by gradual relaxation, hypermotility without peristalsis, and the distention and apparent atony of the duodenum.

Two hours later, the upper portion of the stomach still contained considerable opaque food, and it again showed a complete hour-glass constriction, with a small amount of contents in the region of the pylorus. The upper small intestine was well filled and showed lack of motility.

Four hours after the meal there was still a residue above the hour-glass constriction, and a small amount in the pyloric region. The upper small intestine showed even greater paresis. At the end of six and one-half hours the appearance was much the same, and at the end of eight hours there still remained some residue above the constriction, and the opaque column was progressing very slowly through the small intestine. The residue from the start of the examination had been almost entirely above the hour-glass constriction, and the lower half of the stomach seemed to empty readily and rapidly. There was no evidence of pyloric spasm as noted in so many of our morphin cases.

A sixth fluoroscopic examination, made twenty-four hours after the meal, showed almost all of the opaque material distributed throughout the coils of small intestine. The colon was distended with gas but contained very little bismuth.

Resume. *Effect on Stomach.*—Hour-glass constriction at middle, relaxing somewhat when the stomach was filled, and contracting again as it emptied. Motility. Marked hypermotility in the lower half, with retention in the upper half. Peristalsis not noticeable. Emptying time delayed over eight hours, but almost entirely in the upper pole.

Effect on the Small Intestine.—Primarily, overfilling of the duodenum and then a prolonged paresis of the entire small bowel, continued over twenty-four hours.

Effect on the Large Bowel.—This was not studied, as very little opaque material had reached it in twenty-four hours, and the patient's condition did not warrant further study.

Case 9.—*Clinical Condition of Patient.*—Early acromegaly.

Medication.—Liquid petrolatum, 30 c.c., twice daily, and mixture of sodium bromid, tincture of hyoscyamus and camphor three times a day. By mistake this was not discontinued during the control examination, and was therefore continued during the morphin studies.

Condition of Gastro-Intestinal Tract by Control Examination.—Negative.

Method of Administration of Morphin.—Closely repeated doses by mouth as in Case 7. One-quarter grain one and one-half hours before meal, one-sixth grain one and one-half hours after, and one-sixth grain three hours after meal.

Effect on Stomach.—Motility. The amount which passed through the pylorus was not commensurate with the peristalsis. There was an intermittent pyloric spasm which was very marked at times, wi[illegible] at other times the pylorus seemed to relax to a normal degre[illegible]. Peristalsis. Intermittent hyperperistalsis, which continue[illegible] throughout the examination.

Emptying time. No relative difference at first, but the repeated doses caused from two to three hours' delay.

Effect on Small Intestine.—Only a slight though definite effect at first, but a considerable relative delay through a large area after the repeated doses.

Effect on Large Bowel.—Delay at first evidently due to small intestine stasis. No delay at twenty-four hours (Patient taking oil.)

Case 10.—*Clinical Condition of Patient.*—Idiopathic epilepsy.

Medication.—None.

Condition of Gastro-Intestinal Tract by Control Examination.—Stomach negative, hypermotility, small intestine, slight colonic stasis.

Method of Administration of Morphin.—Closely repeated doses by mouth with concentration of effect earlier than preceding case, one-quarter grain four hours before meal, one-sixth grain one-half hour before, and one-sixth grain two hours after meal.

Effect on Stomach.—Motility. Decided hypermotility early, but this rapidly subsided until there was evidence of pyloric spasm later. Peristalsis apparently not affected until late, when it seemed to increase as pyloric spasm became manifest. Emptying time prolonged several hours as the later effect of pyloric spasm.

Effect on Small Intestine.—Motility still rather rapid, but lessened as compared to control. The duodenum was sluggish in propulsion.

Effect on Large Bowel.—Increase in colonic stasis, as indicated by position of head of column.

Case 11.—*Clinical Condition of Patient.*—Chronic bronchitis, infectious polyarthritis.

Medication.—None.

Condition of Gastro-Intestinal Tract by Control Examination.—Decided colonic stasis.

Method of Administration of Morphin.—Hypodermic injections given entirely before meal and carried to the physiologic action of contraction of the pupil, one-sixth grain ten hours before, one-sixth grain seven hours, one-sixth grain four hours, and one-sixth grain one hour before the meal. The only case in which any contraction of the pupil was noted.

Effect on Stomach.—Motility. Tendency toward intermittent pyloric spasm, which was rather overcome by increased peristalsis and gradually subsided as the effect of the drug wore off. Peristalsis irregularly violent at first but gradually subsided as the effect wore off. One antiperistaltic wave seen early. Emptying time not delayed, keeping pace fairly well with the control throughout.

Effect on Small Intestine.—No delay whatever at any time.

Effect on Large Bowel.—No delay whatever.

Case 12 (female).—*Clinical Condition of Patient.*—Meniere's disease.

Medication.—Sodium bromid and nux vomica, discontinued during examination.

Condition of Gastro-Intestinal Tract by Control Examination.—Nothing abnormal in connection with stomach, but patient vomited early in each series. Colon examination not made.

Method of Administration of Morphin.—Single dose hypodermic injection, one-quarter grain half an hour before meal.

Effect on Stomach.—Motility. Decided early and persistent intermittent pyloric spasm. Peristalsis greatly increased, deeper but not more frequent waves. Frequent antiperistalsis. Emptying time increased about two hours, owing to continued pyloric spasm.

Effect on Small Intestine.—Considerable relative delay throughout the examination of eight hours.

Effect on Large Bowel.—Not studied.

Case 13.—*Clinical Condition of Patient.*—Rheumatoid arthritis.

Medication.—None.

Condition of Gastro-Intestinal Tract by Control Examination.—Probably some perigastric adhesions not affecting function.

Method of Administration of Morphin.—Single dose hypodermic injection, one-quarter grain, forty-five minutes before meal.

Effect on Stomach—Motility No effect at first, but pyloric spasm became evident soon but gradually subsided as effect of drug wore off Peristalsis more vigorous than during control period, but not excessive. Later it became very inactive Emptying time delayed over four hours, owing to early spasm and later inactivity

Effect on Small Intestine—Decided stasis in upper small bowel including duodenum but without distention

Effect on Large Bowel—None

COMMENT

It should be borne in mind that the Roentgen examination is a method of studying only a single phase of drug effects on the gastro-intestinal tract It shows better than can be demonstrated by any other method how the various portions of the digestive canal act in the propulsion of opaque food contents when under drug influence as compared to their action during normal or control periods

We realize that even as a preliminary report our work is lacking in several important respects, and first of all in the small number of cases we have been able to study Secondly, after conclusive proof of certain definite effects due to morphin, we had expected to compare these results with those due to some of the other preparations of opium, but we found the effects of the former so unlike in different individuals that it was difficult to form a basis for comparisons Our experience has shown us that the only accurate way of making relative estimates would be to carry out a series of investigations with morphin and other preparations on the same cases Thirdly, we had hoped to add to our list of eleven morphin cases at least one showing the unusual idiosyncrasies to moderate doses of the drug manifest by obstinate vomiting, but none were available for the purpose In no one of the eleven of this series was repeated even the unusual phenomena observed in the case previously reported,[1] although the heroin case (Case 8) showed very similar effects

What little we have done has shown that there is an enormous amount of valuable work yet to be accomplished in connection with the study of drug action by the Roentgen examination There are innumerable therapeutic agents yet to be studied in this way, and the comparatively little work that has been done along this line needs further confirmation English literature is noticeably lacking in this field of Roentgen investigation

The most surprising result of our observations has been the lack of any degree of uniformity in the effects produced in different individuals This was as noticeable in connection with the stomach as it was in the intestinal tract While we have been able to duplicate the phenomena observed by other writers, we have found them to be far from uniform Van den Velden[5] states that small doses of morphin (0 5 cg) increased peristalsis in the pyloric region Our smallest dose was never less than three times this He found that moderate doses (1 cg) caused in addition a marked constriction in the region of the pyloric sphincter which we never observed, and could cause a complete hour-glass constriction, dividing the fundus from the pyloric region This was observed in none of the eleven cases in our series, many of which had much larger doses, but was seen in the case previously reported,[1] and in our heroin case Large doses (2 cg) increased the effects and caused opening of the cardia and vomiting, which was not observed by us

In two of the eleven cases the morphin in a one-quarter grain dose seemed to exert no noticeable effect whatever on the stomach or its motility The most striking effect was an increase in the emptying time, usually from two to four hours, and observed in seven of the cases In one (Case 11) it was not delayed although pyloric spasm was evident, and in another (Case 2) it was shortened There was decided evidence of pyloric spasm in seven cases, while motility was increased in two instances, in one of which, however, pyloric spasm was manifest late Peristalsis was increased in intensity, the waves being deeper and occasionally more rapid in all nine cases in which there was shown any appreciable effect from the morphin This proved, therefore, to be the most uniform finding Antiperistalsis was noted in three cases Peristalsis was usually increased only in the pyloric portion, but occasionally a hyperperistaltic wave was observed along the entire organ The increase was usually seen to be associated with pyloric spasm In some individuals small doses produced no appreciable effect, while in some the phenomena were as marked as were those observed in other cases following very much larger doses

Whether or not the increase in emptying time was due to hypersecretion which precipitated pyloric spasm, as has been mentioned by some writers, or whether it was even associated with a hypersecretion any greater than might be expected in prolonged retention, we are unable to state

Arnsperger,[6] van den Velden[5] and others call attention to the fact that because food remains longer than usual or normal in a stomach that is under the influence of morphin, the use of opium is undesirable in gastric conditions in which the emptying time is increased, as perigastritis, adhesions, ulcers, carcinoma or reflex pyloric spasm from outside causes No doubt this might be the case occasionally and the continued use would be so almost invariably, but we cannot see how any direct harm could result in these conditions in most instances from the occasional use of the drug when needed Moreover, how much additional effect morphin would have in prolonging the emptying time in such conditions, and especially those in which pyloric spasm is a cause of delay, as ulcer, is a field for further study On the other hand, because morphin delays the emptying time we would not consider its routine use indicated in conditions in which hypermotility is present, as achylia gastrica, and especially because of its effect on the small bowel

Practically all authors agree that morphin lessens motility in the small intestine Unlike the stomach, delayed motility in the small bowel seems to result from a lack of propulsion instead of spasm It may be manifest only as an apparent relative delay of the column in the lower ileum, which we have regarded as an index of a slightly lessened motility higher up along the tract In many of our cases, and especially in the one previously reported[1] and in the heroin case of this series, the lessening of the motility was so marked as to be noticeable throughout a large part of the small bowel This was most noticeable in the jejunum, but sometimes in the duodenum as well, or in other words, in the portions where the most rapid movement is normal Stierlin and Schapiro[7] raised the question of spasm of the ileocecal valve being a cause of delay there, but so far as we could note there was no unusual crowding of contents in the terminal ileum

Arnsperger[6] states that the small intestine showed slowing in all cases examined We found this to be fairly constant, having been observed in ten out of the eleven cases of the morphin series In the one exception, the case which received the largest dosage, and the only one in which contraction of the pupil was noted, no effect whatever was shown by the small bowel In one of the ten positive cases, which was examined twice, a single dose produced no appreciable effect, but at the second examination when the dose was doubled, there was a noticeable delay In another of the ten cases a hypermotility was lessened In nine of the ten cases showing delay, there was evidence of this in the upper portion of the bowel

Experience has shown that our method was not the ideal one for studying the effect on the large bowel, although our results were very much the same as those of others As a rule this part of the tract was studied at the end of the examination, after the active influence of the drug had subsided partially or entirely A more accurate method would be to administer the drug at about the time the cecum was filled and the terminal ileum nearly empty — from six to eight hours after the meal in the average case This was the procedure followed by Arnsperger[6] His results were very variable, however, with different doses and with different individuals given the same doses Stierlin and Schapiro[7] found that morphin had no effect of any consequence on the large bowel

In all of our cases the large bowel was studied in connection with the tract higher up Our conclusions were based mainly on the relative position of the head of the opaque column as compared to the control The colon was studied in ten cases, and a noticeable delay in the head of the column was observed in six, and no apparent effect in three, two of which received small early doses and the other case which received the largest dose of any In one of the ten, delay was doubtful

So far as we were able to judge, it made little difference whether the morphin was administered by mouth or subcutaneously The only accurate way to determine the relative effect of varying dosage would be to examine the same individuals repeatedly with increasing doses, as small or single doses in one individual may produce the same or a more marked effect than large or repeated doses in others Of the two sexes, females seemed to be more susceptible

CONCLUSIONS

The Roentgen examination is a valuable method of studying certain phases of drug effects on the gastro-intestinal tract, especially motility, and the knowledge it furnishes can be gained better by this method than by any other

Our observations were made in a series of eleven cases given morphin and one heroin habitue While we have been able to duplicate the phenomena observed by others, with one exception, there was a decided lack of uniformity in the effects produced in different individuals, in connection with both stomach and bowel

There is no distinct uniformity in connection with dosage Small doses in some may produce more marked effects than much larger doses in others Females appear to be more susceptible

In the stomach a rather high spasmodic hour-glass contraction is observed rarely, but we have not seen this near the pylorus as described by others In some instances the stomach may show no appreciable change from normal In most cases there is more or less pyloric spasm, increased peristalsis and a decided prolongation of the emptying time

In the small intestine, morphin causes decreased motility almost uniformly, apparently as a result of a lack of propulsion and not of spasm When marked, it is most noticeable in the upper small bowel

The effect on the large bowel is very variable and probably of little consequence

Oral administration produces practically the same effect as subcutaneous injections

3400 Spruce Street—1804 Pine Street

THE ENDOWMENT OF CHILDHOOD FROM THE OBSTETRIC STANDPOINT *

JOHN F MORAN, M D
WASHINGTON, D C.

The present era in the practice of medicine, like the preceding periods, is one of transition, and the goal the conservation of health and the prolongation of life, is hampered by ignorance, mysticism, superstition and exploitation The beacons of scientific investigation, clinical observation and experience, however, are steadily revealing the mysteries of Nature, and are thereby enriching our knowledge in the alleviation, prevention and cure of disease Down through the ages each period has contributed more or less to this progress, and we are not unmindful of the rich heritage we enjoy in the possession of the accumulated knowledge and treasures of our predecessors which form the granite ground-work of the art and science of medicine

Each era has been distinguished for some epoch-making contribution Ours is particularly noted for the development of an aseptic technic which has revolutionized the practice of surgery and obstetrics We were present at the christening, if not the birth, of that science, bacteriology, which has placed preventive medicine and sanitation on a rational and enduring basis A half century ago the practice of surgery was mostly of an emergency character, caring for fractures, dislocations, gunshot wounds, etc, while today three fourths of the operations are elective and cover a wide field of application "No cavity is now too deep and no organ too important or vital to deter from direct interrogation By vision and tact, the gravity, density and magnitude of any, of every part, may be revealed to the sensorium and adjudicated by the unerring edict of positive knowledge "[1]

The more important advancements in obstetrics as the result of these recent developments are the awakening interest in prenatal care and the prevention of infant mortality, the practical abandonment of craniotomy on the living child, and the broadened indications for cesarean section

In my previous address[2] on "The Endowment of Motherhood," I made a plea for better obstetrics in general practice, and expressed the belief that the solution lies in more intensive training of the students in practical obstetrics and educating the public to the necessity of efficient care of woman in the most important epoch in her life

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* President's address, read at the meeting of the Washington Obstetrical and Gynecological Society, Oct 8 1915

[1] Miller DeLaskie Tr Ninth Internat Med Cong ii, 302

[2] Moran, John F The Endowment of Motherhood, The Jour A M A, Jan 9, 1915, p 122

Of course, accrued benefit to the unborn child was implied in this advanced obstetric teaching and practice, but I wish now to direct attention more specifically to what has already been accomplished regarding its welfare and the prospective possibilities of the future

The importance of the subject does not arise from the frequency with which its problems are presented but from the grave emergencies created by them — emergencies which demand early recognition and prompt decision by the physician in that they involve the lives of the mother and child, as well as points of professional honor and conscience

The longer I practice obstetrics, the more deeply I am impressed with the difficulty which often presents itself of deciding when to interfere and what particular method of intervention to elect In no other field of medicine is a well-balanced judgment and skill more requisite for success, and not infrequently, even then, the result is fortuitous

"When it is realized that practically 38 per cent of the deaths under 1 year of age are due to causes mainly dependent upon the health and condition of the mother during pregnancy and confinement, that within the registration area of the United States of 154,373 infants under 1 year of age, who died in the year of 1910, 14,964, or nearly 10 per cent, lived less than one day, that 36,351, or practically 23 5 per cent, lived less than one week, it will be seen that the infant mortality problem cannot be solved adequately by any measures which leave out of their scope some attention to the care of the expectant mothers" Since the foregoing sentence was written, the mortality statistics for 1911, issued by the Bureau of the Census, show a more distressing situation than was revealed by the figures of 1910 With an increased death registration area (now covering 63 per cent of the total population), there was a decrease in deaths of children under 1 year to 149,322 as against 154,373 in 1910 But those who lived less than one day increased not only relatively but also absolutely, that is, from 14,946 in 1910 to 40,883, or 27 4 per cent, in 1911 These figures show that the efforts made to save babies through pure milk and more intelligent care have produced results, while lack of organized effort to reach prenatal conditions for a very considerable period or over any extended area has further emphasized its need[3]

TABLE 1—CAUSES OF DEATH FOLLOWING CONFINEMENT

Cause	No	Per Cent
Prematurity	250	40
Inanition	99	15 8
Accidents of labor	34	5 4
Atelectasis	30	4 8
Asphyxia pallida	21	3 3
Asphyxia accidental	11	1 7
Patulous foramen ovale	11	1 7
Congenital syphilis	22	3 5
Hemorrhage of the new born	26	4 1
Enteritis	40	6 4
Pneumonia	19	3
Toxemia	12	1 9
Convulsions	12	1 9
Malformations	9	1 3
Miscellaneous	27	4 3
	623	

These figures of the death toll of early infancy are appalling, and show that besides the unavoidable mortality incident to childbirth, many infants are born hopelessly handicapped for life's struggle, while many more perish through ignorance and neglect

The illuminating papers of Williams,[4] and Holt and Babbitt,[5] *on institutional infant mortality incident to childbirth and the two weeks following, show on careful analysis of 10,000 consecutive cases by each reporter how a very large percentage of the mortality could have been averted by intelligent supervision of pregnancy and competent care during labor*

TABLE 2—STILLBIRTHS (INCLUDING ABORTIONS)

Cause	No	Per Cent
Unknown	342	47 4
Congenital syphilis	84	11 7
Accidents of labor (dificult and prolonged 50 prolapsed cord 64 cord around neck, 5, knotted cord, 4)	123	17 1
Toxemia and eclampsia	34	4 7
Asphyxia	35	4 7
Accidents (violence)	28	3 9
Monsters	6	8
Placenta praevia	30	4 1
Accidental hemorrhage	23	3 2
Miscellaneous	11	1 5

In this connection I wish to invite attention to a summary of a review of 10,533 confinements which occurred in the obstetric service of Columbia Hospital from July 1, 1876, to June 30, 1915 They were divided as follows stillbirths (including abortions), 716, living births, 9,817

The hospital is open to the profession All classes are received More than 60 per cent are admitted in labor, and over 70 per cent of the confined are colored The free patients are discharged on the eighteenth day, though in case of illness the time is extended to meet the requirements

It will be observed from the tables that the "unknown" forms the largest contingent of fetal deaths — nearly 50 per cent of the stillbirths and 24 per cent of the total *infant-mortality* This is because diagnosis was usually based on clinical data and often incomplete history, and frequently because a satisfactory explanation was wanting Routine Wassermann, other laboratory tests and necropsies would surely have proved many of this group to have been due to syphilis Bearing on this point, the following data furnished me by Mr Peter, the pharmacist, is of much

TABLE 3—GENERAL MORTALITY

Cause	No	Per Cent.
Unknown	342	24
Prematurity	250	18 5
Accidents of labor	157	11 7
Syphilis	106	7 9
Inanition	99	7 9
Asphyxia pallida	56	4 1
Asphyxia, accidental	11	8
Patulous foramen ovale	11	8
Toxemia and eclampsia	46	3 4
Enteritis	40	2 9
Placenta praevia	30	2
Accident (violent)	28	2
Hemorrhage of the new born	26	1 9
Atelectasis	30	2
Accidental hemorrhage	23	1 7
Pneumonia	19	1 4
Malformation and monsters	15	1
Convulsions	12	0 8
Miscellaneous	38	2 8

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[3] Baby Saving Campaigns p 381 Infant Mortality Series No 1 Publication 3, Children s Bureau U S Dept. of Labor

[4] Williams J Whitridge The Limitations and Possibilities of Prenatal Care, The Journal A. M. A, Jan 9 1915 p 95

[5] Holt L. Emmett, and Babbitt nal Mortality of the New Born The Journal A. M 287

significance Of 171 Wassermanns done in the past four years in the obstetric department, 113 were positive, and out of this number thirty-five, or 30+ per cent, were stillbirths Out of the fifty-eight negative reactions there was only one stillbirth It would probably be a safe estimate to say that at least 40 per cent of the unknown stillbirths was caused by syphilis

Prematurity, syphilis, inanition, atelectasis and toxemia constitute nearly 70 per cent of the total mortality, and are independent of labor. These factors influence pregnancy disastrously, and yet are largely preventable and amenable to well-directed treatment

The causes intimately connected with intrapartum mortality are malpresentation, forceps operations (asphyxia and intercranial hemorrhage), placenta praevia, ablatio placentae, rupture of the uterus, eclampsia, tetanic uterine contractions, etc, and were responsible for 18 per cent of the fetal deaths

It is difficult to estimate the probable percentage of this group that might have been saved, because many operators officiated and naturally the judgment and skill varied accordingly I know, however, from personal experience and observation, extending over a number of years, as intern and member of the visiting staff, that I and others were responsible for some of the mortality because of errors of judgment and execution

Pneumonia and enteritis were the most frequent mortality factors after confinement, and with the miscellaneous and accident groups made up 9 per cent of the total, while hemorrhages of the new-born and malformations and monsters yielded 3 per cent

This summary emphasizes the indubitable fact that there is a needless sacrifice of infants because of the neglect of prenatal care, and that early recognition of abnormal conditions and timely intervention would have averted many of the intrapartum disasters

The public should be taught that the risks attending parturition can be, for the most part, avoided by intelligent oversight of the parturient, by preparedness for rendering aid when needed no less than by masterly inactivity when normal

Much good is being accomplished by the various organizations engaged in the welfare of motherhood and childhood, by stimulating general interest in the cause and securing lay and professional cooperation, but if this much to be desired beneficence is to become nation-wide, the checking and follow up system can be satisfactorily done only under state subsidy and control

For some inscrutable reason, the life of the child has been held to be of unequal value compared with that of the mother, and in complicated childbirth, when both lives are in jeopardy, the child is to be sacrificed This is contrary to natural law, according to which all lives are equal, and furthermore, science has shown that this dictum is untenable in that there is no conflict between the life of the mother and the life of the child, and the direct sacrifice of either in the interest of the other can be defended, if at all, only on the ground of expediency and not on the claim of justifiability

Expediency is a subterfuge used to subordinate right and justice to might and convenience, whether it be in the stifling of a human life in its inception by that heinous crime of convenience, criminal abortion, or the deliberate taking of a life in the fulness of its development and when ready for external existence by a destructive operation

The passing of craniotomy on the living child is one of the greatest triumphs of modern obstetrics — a veritable turning of defeat into victory Practiced almost from the dawn of civilization, down through the centuries, this mutilating operation is happily being supplanted by humane methods of intervention that have for their purpose the saving of both lives

In this connection, I quote from the recent interesting paper of Dr Wall[6]

> It cannot be charged against us, as it was in the earlier days of medicine, that the interests of the child are entirely subservient to those of the mother The abandonment of craniotomy on the living child was an acknowledgment of infantile rights, which, thanks to modern advancement in medical science, have attained a station hitherto unknown, so that the mortality of the child is mentioned in the same breath with that of the mother in almost all obstetrical conditions and procedures
>
> I am of opinion that there is still room for improvement in judging the rights of the unborn child, and there are certainly enormous opportunities for advancement in the consideration and attention bestowed on the little individual after birth

It is to the honor of this society, dedicated to the cause of motherhood and childhood, that its first anniversary (1883) was made memorable in the defense of the rights of the unborn child The president, Dr Busey, in a trenchant and forcible address, challenged craniotomy on the living child as being unethical and unscientific, and, in the light of medical progress, should be abandoned in favor of cesarean section and other conservative measures

Until less than twenty-five years ago, cesarean section was rarely performed save for contracted pelvis, obstruction of the birth canal by tumors and in the case of sudden death of the mother, while today it embraces in its broadened scope not only deformities of the pelvis but also some cases of placenta praevia, eclampsia, disproportion between the size of the child and the pelvis, heart disease, ventrifixation, stenosis of the cervix and vagina, edema of the vulva and accidental hemorrhage, and a member of this society, Dr Bowen, has recently advocated it for certain breech cases, particularly, in aged primiparas after a test labor, even though the pelvic measurements are normal

I am in accord with this recommendation, for the usual methods of practice in this class of cases are attended with an infant mortality of from 10 to 20 per cent In discussing the case reported by Dr Bowen, I said

> Under the conditions mentioned with the patient showing signs of fatigue, evidenced by increased pulse rate, uterine inertia, etc, cesarean section was not only justifiable but a rational method of procedure, even though the pelvic measurements be normal If the bag of waters were intact and condition of mother and child favorable, some would advocate further trial aided with sedatives Instead of putting forth "the desire for a live child," I would make it stronger by substituting "the inherent moral and legal right of the child to be born alive" I had two somewhat similar cases recently in consultation, in one of which I resorted to slow extraction, against the better judgment of the attending physician, who suggested the advisability of cesarean section, lost the baby and got severe perineal laceration and colon infection In the other case, classical cesarean section was done with happy results to mother and child

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[6] Wall The Status of the Child in Obstetric Practice, read before the Washington Obstetrical and Gynecological Society

In the complications that confront the obstetrician, there is none that is fraught with more danger or attended with greater anxiety than placenta praevia, save perhaps eclampsia Its sudden manifestation, often alarming hemorrhage and consequent anemia, shock and possible infection present a formidable array of difficulties that even in the hands of the most skilled has been attended with a high maternal mortality It is true that in recent years, with more definite method of treatment and advances of antisepsis and sepsis, the maternal death rate has been greatly lessened, but the extraordinarily high proportion of infants lost remains unchanged

If we analyze the statistics, we cannot fail to recognize that it is the lateral and marginal varieties that have contributed largely to this improved showing by directly sacrificing the life of the child by using it as a plug to control the hemorrhage In central implantation, modern methods have not materially affected the death rate It was quite natural, then, that other measures would be evolved with the hope of reducing the frightful infant mortality, while still not increasing, if not improving the chances of the mother Hence for more than two decades, from time to time, the justifiability of cesarean section in certain cases of placenta praevia, in the interest of the child as well as the mother, has claimed the attention of the profession Some have recommended it on theoretical grounds, with the conclusion that it is not only justifiable, but also indicated in central implantation of the placenta On the other hand, there are those who are equally positive in their belief that cesarean section has no legitimate field in placenta praevia, contending that the mother's life is of paramount importance and further, that many of the infants will of necessity be born prematurely and likely to succumb at birth The physician has no moral right to decide between the value of two lives, nor is he in conscience capable of determining whether the child will survive or not Both are his patients, entitled to his best skill and he is in honor bound not to deliberately sacrifice the life of one to save the other

The induction of premature labor, though offering little danger to the mother, is opposed on the ground of fetal mortality Besides, it is not an easy matter to determine the time for intervention, and the widest experience and most painstaking study and keenest mechanical sense are requisite for successful issue of this operation

Expediency rather than fitness is often the determining factor in choosing the method of intervention in obstetric practice The physician without surgical bent or training relies on such measures which, while usually safeguarding the mother's welfare, are often inimical to the interests of the child How often do we see cases of delivery by forceps or version in which the child is sacrificed at birth or dies within a few days afterward of cranial hemorrhage? It is with the borderline cases that we have so much difficulty, and they require the most exacting care in deciding how best to act in the interests of both lives The great mistake that many make is to apply forceps in cephalic presentations regardless of position and whether the head is engaged or not The cardinal rule is that forceps should never be applied to a head that has failed to enter the brim of the pelvis, for in a very large percentage of cases disaster will be almost sure to follow

I do not wish to be understood as in any way underestimating the value of forceps, version and the induction of premature labor, as they have their field of usefulness, nor am I unmindful of the fact that in the majority of cases the children would deliver themselves unaided, but what I do advocate is that more attention be given to the patient during pregnancy and that at the appropriate time a careful and thorough examination be made so as to be prepared to intervene at the proper time in the interest of both mother and child

During the past year considerable attention has been given to *Dammerschlaf* or "twilight sleep" in the medical and lay press The Freiburg method was tried out in this country nearly a decade ago and practically discarded Through the restatement of the method by one of the proponents, reiterating its claims for producing amnesia in labor, and the prompt exploitation of the address in a lay magazine article, the interest in the treatment has been reawakened, and the method is again being given a trial in several hospitals and by others It matters little whether the lay propaganda is due to the alluring euphony of "twilight" or to commercial cupidity, when compared with the duty of the profession to settle definitely whether the method possesses the value claimed for it This the searchlight of experience will determine, and the profession will before long be able to decide if it is to fill a much desired want in obstetric practice or share the fate of spinal analgesia

With a view of learning of the status of *Dammerschlaf* in Germany and elsewhere in Europe, I wrote to Professor von Heft, director of the Frauenspital, Basel, Switzerland He replied as follows

> I do not employ *Dammerschlaf* (twilight sleep) because it requires constant supervision also because it excites a number of the patients and in my judgment the infants are likewise endangered Years ago I made experiments which did not satisfy me The results are given by von Dietschy whose article I send you In a large maternity like this where the lying-in women cannot be isolated, the treatment is according to Kronig, contraindicated So far as I can see, *Dammerschlaf* is little used in Switzerland If used at all it is by physicians who have private clinics, hence 'painless labor' is to them a valuable advertisement In Germany also one does not enthuse greatly, and I believe the majority of my colleagues decline this method for example Fehling In isolated cases, quite naturally, it is of service

This criticism, from the knowledge I have gathered from the current literature, is very fair That scopolamin will produce amnesia is conceded, but its utility and freedom from danger are not generally accepted Reports of its indications and limitations are accumulating, and the almost universal discordant note is that it is not without danger to the child Dr Mundell has kindly placed at my disposal the replies of eight of the leading obstetricians in this country to whom he wrote asking advice regarding the use of the Freiburg treatment Those who favor its use restrict it to the first stage, and all but one emphasized its danger to the infant

There has been much undeserved criticism of those investigators who insist that the treatment should be given only by an expert The fact that it should be administered only by one who has had experience and that it is not feasible in general practice will, if for no other reason, operate against its general adoption

The field of obstetric practice has rarely been invaded by the quack, the work being too arduous and unremunerative, but the physicians who for mercenary considerations are imposing on the credulity of their insistent patients for the Freiburg treatment, by giving them "near" twilight sleep, are courting charlatanry

Obstetrics appears, as it passes before the mental vision, like a panorama of light and shade Supposed discoveries in the science and improvements in the art illuminate the scene, till the crucial light of experience casts a shadow of disappointment over the factitious light. We seek the truth Physicians know too well that the search is surrounded with difficulties, for we advance along the asymptote of the hyperbola, though we have not attained the absolute, we are approaching the object of our quest[1]

There are still many problems in obstetrics to be solved, including a remedy that will produce amnesia in labor or preferably eutocia, at will — *tuto, cito, jucunde,* safely, quickly, pleasantly Meanwhile let us continue to mitigate the pangs of labor with the measures which in succoring the mother do not jeopardize the life of her child

The keynote to decreasing the appalling infant mortality is good obstetrics, and the watchword is efficiency — efficiency in prenatal care — so that at the time of birth, mother and child shall be in the best possible condition, and efficiency in the conduct of labor, whether it be in the rôle of "watchful waiting" or masterly activity, in order that the child shall be assured its inalienable right to be born alive and healthy, and the mother safeguarded to a successful and happy fruition of her noblest mission in life — maternity

2426 Pennsylvania Avenue N W

WHERE CHIROPRACTORS ARE MADE

THOMAS F DUHIGG, M D

DES MOINES, IOWA

As the season for legislation approaches, I feel that the information I have concerning chiropractors should be put at the disposal of those interested in guarding the public health and maintaining respectable educational standards The chiropractor's machine-made bills will be introduced into the legislature of every state where they have not received recognition

Iowa schools of chiropractic probably graduate more than the schools of any other three states Davenport is called the home of this sect, but Iowa does not recognize chiropractors, and they are liable to a fine of $300 if they practice here Obviously they swarm to other states, in some of which they are permitted by law to practice, and in others they are merely tolerated It strikes us as peculiar that other states, some with high educational standards, should take large consignments of our "graduate" chiropractors who have graduated from schools which require no preliminary qualifications and which have no libraries or hospitals — graduates of schools without any standing, inspected by no one, regulated by no one and conforming only to their own low estimate, which refers entirely to financial and not at all to scientific standards

After reading the reports of the inspector of the state of Pennsylvania, I believe the forty-seven other states will exclude the graduates of the Iowa schools of chiropractic the same as Pennsylvania has done This report is remarkable in that it was made by one outside Iowa and in the interest of the health of the people of a far distant state It is a testimonial to the care and judgment exercised by the officials of the great commonwealth of Pennsylvania in safeguarding the lives and health of those they are sworn to protect Likewise it is an indictment of the officials in all those states which have accepted these graduates without first having made a careful inspection and ascertained the extreme wretchedness of the physical equipment of the schools and the mental equipment of their graduates

The accompanying tabulation gives the reports on the three schools of chiropractic at Davenport, Iowa, made by the inspector of the Pennsylvania Bureau of Medical Education and Licensure

CHIROPRACTIC COLLEGES OF IOWA

A TABULATION FROM REPORTS OF THE INSPECTOR OF THE PENNSYLVANIA BUREAU OF MEDICAL EDUCATION AND LICENSURE

	Davenport College	Universal College	Palmer School
Buildings	One, an old church	One fair size	Four (crowded)
Access to hospitals	None	None	None
Dispensary facilities	Saw no evidence of	Ample *	
Admission requirements	None	Common school	Common school
Anatomy, dissecting	Not taught	Dissect a few dogs	Only dogs dissected
Histology	No equipment	Didactic only	Very incomplete
Embryology	Not taught	Not taught	Not taught
Surgical anatomy	Not taught	Not taught	Not taught
Physiology	Didactic only	Lectures only	Lectures only
Physiologic chemistry	Not taught	Lectures only	No equipment
Chemistry, inorganic and organic	Not taught	No practical work done by students	No equipment for teaching
Pathology	*	*	*
Bacteriology	Not taught	Not taught	No equipment
Pharmacology	Not taught	Not taught	Not taught
Microscopic diagnosis	Not taught	Not taught	Not taught
Medicine	Not taught	Not taught	Not taught
Pediatrics	Not taught	*	*
Nervous and mental diseases	*	*	*
Surgery	Not taught	Not taught	Not taught
Anesthesia	Not taught	Not taught	Not taught
Gynecology	Not taught	Not taught	*
Eye, ear, nose and throat diseases	Not taught	*	*
Dermatology and genito-urinary diseases	*	*	*
Class rooms	One	Two	Four
Clinical amphitheater	One large room		Two
Medical library	None	Small	None
Microscopes	None	Two	Twelve
Having oil immersion.		One	One
Reflectoscopes	None	Yes	Yes
Stereopticons	None	Yes	Yes
Obstetric manikin	Part of one	Yes	Yes
Maternity work	Not taught	Not taught	Lectures only
Charts	A few	Large supply	Large supply
Models	None seen	Yes	Yes

* This subject is taught only from the chiropractic standpoint, as it is related to certain spinal "lesions"

Regarding the individual colleges the inspector made the following statements

Davenport College of Chiropractic—"Their alleged 'chemical laboratory' consisted of a table about 18 inches square, on which were six dusty bottles and three dirty test tubes There were no records of work done by the students or of attendance at lectures or clinics"

Universal Chiropractic College—"They are not in any way equipped to give the character of instruction that would make their graduates safe advisers to the sick"

Palmer School of Chiropractic—'They pretend to give a course in obstetrics with no practical experience A person who assumed to practice on information gained from this course alone would be dangerously incompetent

Some of their professors are exceedingly ignorant The 'professor' of chemistry alleged he taught the Widal test' chemically but chemicals for even ordinary tests were not in evidence *those in evidence* showed no marks of use, most of the bottles being still sealed

The institution is not physically equipped to turn out safe graduates"

A letter *from* Dr *J* M Baldy *president* of the Pennsylvania Bureau of Medical Education and Licensure to whom the manuscript of this article was submitted states as follows

'The data quoted from our inspection is correct I have gone over it myself and have submitted it to the inspector"

It is sufficient to say that the three schools are uniform on the following points None has a library, a hospital, a laboratory that is worthy of the name, postmortems or capable teachers Add to this farce students without preliminary education beyond the mere ability to read and write and who "graduated" after a course of only one year in one of these "colleges," and we have an individual who is hopelessly handicapped for life, one who cannot in any sense be considered a safe adviser of the sick

These reports set forth everything with painful exactness and embarrassing detail Any patriotic legislator will be justly incensed at the thought of taking the intellectual refuse from these schools who are not permitted to practice in Iowa, to be used in his own state as the guardians of life and health They should not be given legal recognition to practice in any state If they are permitted to practice, it should be only after they have obtained the same professional and preliminary training that is required of physicians, which in Iowa is a high school education and two years of collegiate work plus four years of professional training in a medical school that maintains a standard satisfactory to the licensing board

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Inconsistency of the Antivivisectionist.—Of course there are all sorts of men among physicians and surgeons as in all other professions Abuses and outrages do occur, no doubt There have been wicked doctors who have abused their trust, and there have been clergymen with whom the virtue of a young lady boarder was not safe, but we need not say for this reason that all surgeons are arch torturers and that all preachers are arch-lechers Just as you do not need to pass a special law against adultery by ministers of the gospel, but that if you did so you would put an imputation on the character of a large body of earnest, sincere and unselfish men, so you should not pass laws which would put on men in biological research the imputation of bad faith and cruelty Make the general laws against cruelty to animals as strict and far-reaching as may seem necessary for the good of the human race, but do not single out the men who are devoting their lives to the search after that knowledge *which is for* the best good of the race, and make them the special objects of unnecessary restrictive limitations If experiments on animals must be prohibited let the same law prohibit castration of animals and the dehorning of cattle If the English law requiring all operations by a scientific man to be done under anesthesia be adopted then require that operations on the farm be performed in the same way —Maxwell, *Science*

RECTAL AS A SUBSTITUTE FOR VAGINAL EXAMINATIONS IN LABOR

RUDOLPH WIESER HOLMES, M D
Associate Professor of Obstetrics and Gynecology, Rush Medical College
CHICAGO

In spite of the most rigorous regard to the details of asepsis in the preparation of the patient, of the attendant's hands, and of the supplies which may directly or indirectly approach the two, the dangers of puerperal infection have not been reduced to that negligible degree which our profession should attain Since the days of Carl Braun, various authorities have recognized the dangers accompanying vaginal examinations, have strenuously demanded the diminution of their number, and have sought means whereby such curtailment might be possible All modern authorities are agreed that vaginal examinations, no matter with what conscientious regard to aseptic technic they are conducted, carry with them their risk of sepsis Today it is generally recognized that abdominal palpation, aided by a proper interpretation of clinical evidences, offers as much, if not more, certitude as to the condition of the woman and progress of labor than do vaginal examinations alone The elimination of the necessity of entering the vagina, or at least reducing the frequency to the point at which imperative exigency demands it, will be a distinct obstetric advance In this paper, I would show that rectal examination fulfils this purpose, and that rectal will secure as much definite information, in most particulars, as do vaginal examinations, and without the risks of infection which inevitably accompany the latter

When ventral fixation was a popular procedure, I found it expedient, in a number of women in labor, to endeavor to reach the cervix by rectal palpation This was merely applying a method resorted to in gynecologic cases when, as in virgins, it was impracticable or impossible to use the vaginal route However, this did not suggest the full value of the method in the conduct of labor Two or three years ago the broader application was grasped from a source not determined At first, used in an incidental manner, then as a routine, an experience matured which has convinced me that it was an invaluable method of investigation Now, I am certain that rectal examination, supplementing abdominal palpation, should largely supersede vaginal touch in the conduct of *normal labor*, and in certain pathologic cases to be hereinafter mentioned, the latter route should be reserved solely for those cases in which the findings are inconclusive, or as a preliminary to operative work through the parturient canal

Rectal, as a substitute for vaginal examination, was suggested by Kroenig,[1] Nov 20, 1893, in a paper read before the Obstetric Society of Leipzig The method was introduced in his clinic early in August, 1893 The midwives quickly developed a facility in the procedure, so that in the three months covered by his report, 90 per cent of all labors were conducted by rectal examination alone He deduced the following conclusions

1 Midwives could palpate the spines of the ischia, determine the movability of the coccyx, and estimate the degree of resistance of the perineum

2 They could determine whether the presenting part were in the pelvis or not

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[1] Kroenig Zentralbl f Gynak. March 10 1894

3 They could recognize the sutures of the forelying head

4 They could determine the relationship of the crown of the head to the bisischiatic line

5 They could determine the dilatation of the os definitely in multiparas In primiparas, errors were apt to occur, when effacement was completed

6 Generally the fontanels were not to be differentiated

7 The promontory was palpable only when a high grade of pelvic contraction existed

Independently of Kroenig, Emil Ries,[2] now of Chicago, began an investigation of the possibilities of rectal examination, in January 1894, in the Strassburg clinic, and published his results a few weeks after Kroenig The possibilities of the method were largely determined by Kroenig through the work of the midwives Therefore, we have conclusive evidence of its worth as a means for general application Ries' deductions were fixed largely by the results obtained by his own personal experience As a consequence, his findings are more valuable, more comprehensive and more utilitarian for the working needs of the medical attendant He corroborates the teachings of Kroenig, but has determined the far wider range of its applicability than Kroenig concedes for the method Ries has presented the only extensive monograph on the subject, an opinion based on a very cursory review of the literature Only one American textbook on obstetrics mentions the utility of rectal examinations, in a paragraph which includes four or five lines F Menge[3] gives an adequate interpretation of the application of rectal examination He says, "If one combines it [abdominal palpation] with rectal examination, then after a little practice, one is able to judge in every single case all diagnostic and prognostic details with certainty, even if the case comes after the onset of labor " He further recommends that a single vaginal touch is to be undertaken only when the combined external palpation and rectal examination is not clear in every particular

That the logical position of rectal examination may be properly presented, I shall give the usual factors which must be determined by routine vaginal exploration These are taught in most recent textbooks, and are the factors which essentially are to be determined by the new method of investigation At this point I can but mention the necessity of a definite procedure with every woman who presents her case to the obstetric attendant The physician should make it an invariable rule to study carefully every woman by repeated abdominal and pelvic examination during the months of pregnancy, in order that he may be conversant with her normality or abnormality, so he may properly and intelligently supervise the labor

FACTORS TO BE DETERMINED

Vaginal examinations in pregnancy, as we have learned by precept and example, should comprehend the determination of the following facts

1 The pelvic size, its normality or abnormality

2 Soft parts their normality or abnormality (*a*) the perineum, (*b*) the vagina, (*c*) the cervix and os, (*d*) recognition of tumors in or about the lower segment — placenta praevia, etc , (*e*) the rectum

3 The fetus presentation and position, the cephalopelvic adaptability

Further, in labor additional data must be determined

4 The fetus (*a*) revisional diagnosis of presentation and position, which must be made because many of the deviations from the normal are the products of labor, (*b*) the station of the presenting part, (*c*) the fact of compound presentation, as prolapse of the arm, leg or cord, (*d*) fetal deformities

5 The effacement of the cervix, and dilatation of the os

6 The status of the membranes

Of course, in the event that the woman is first seen with labor in progress, all the foregoing data must be determined at the first examination, and may demand a vaginal examination

There may be no question of the expediency of combining external palpation with vaginal examination *in pregnancy*, for then, carefully conducted, in a cleanly manner, the danger is negligible To control the vaginal findings by rectal touch, in pregnancy, will convince the most skeptical of the desirability and reliability of the latter, and will manifest to him the certitude and conclusiveness of the knowledge obtained by it The information obtained by these means, and properly recorded for reference in labor, will determine with definiteness the potential possibilities of the safe passage of the child Therefore, in labor, only the supplemental factors have to be elicited by a pelvic examination — and they may be conclusively fixed by rectal touch

The Pelvis —The configuration of the posterior half of the pelvis may be outlined with clearness, in many respects with a precision that is impossible vaginally The contour of the sacrum, its irregularities and relation to other osseous structures may be determined, the position and movability of the coccyx are evident The spines of the ischia may be palpated, and their influence on labor may be approximated, as in the case of the ischia themselves I cannot concur in Ries' contention that the anterior pelvic half may be palpated as definitely rectally as vaginally Likewise, I have not convinced myself that the diagnosis of pelvic size is easily feasible rectally, though I do not doubt that some resourceful mind will discover a practical means of determining the conjugata diagonalis, even the vera, rectally I have not been able to determine the diagonal conjugate, though the cephalopelvic relationship may be judged with a certain precision

The Soft Parts —Generally, the condition of the soft parts may be determined with the same accuracy as by the vaginal examination, the perineum may be studied with clearness, the texture of the vagina and of the cervix may be readily estimated, and the important data appreciated The progress of the effacement of the cervix may be observed, and the degree of dilatation of the os measured, the clearness of recognition is particularly evident if the cervix is directed posteriorly It is a clinical fact that effacement of the cervix and dilatation of the os occur synchronously in multiparas In primiparas, the rule is for effacement to occur, then dilatation follows Therefore, it is more easy to recognize the degree of dilatation in multiparas In primiparas, the difficulty of appreciation is due to the fact that the thinned cervix fits snugly over the bulging membranes without a thick ring to designate the os As Ries has well pointed out, by palpating the cervix at the height of a contraction, little will be felt, in the interval of contraction, the lessened tension of the membranes will allow an indefinite band to develop which represents the boundary of the os He also shows that the degree of dilatation is of relatively slight importance Its size merely designates, to a certain extent, the progress of labor An emergency which imperatively demands immediate operative intervention is not influenced by the fact that the os is dilated two or four fingers — a dilatation must be consummated artificially The employment of this method has not been occasioned in placenta praevia, but, *a priori*, its recognition by rectal means would be influenced by the same factors which would permit its easy or difficult palpation vaginally Often, a tumor may be outlined better by rectal examination than vaginal

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[2] Ries, Emil Zentralbl f Gynak April 28 1894

[3] Menge F Winckel's Handbuch der Geburtshulfe, 1, Part 2, p 1208

The Fetus—In the majority of cases the diagnosis of presentation and position may be made without difficulty, providing the presenting part be within the pelvic cavity, that is at least engaged, often, it is surprising with what degree of certainty the sutures and fontanels may be palpated This is especially true after material dilatation has occurred Unquestionably, the facility with which they may be recognized rectally is directly commensurate to the ease with which they may be differentiated vaginally We all occasionally encounter women in whom it is well nigh impossible to recognize the landmarks of the fetal head on account of the advanced ossification, or from marked overriding of the bones the result of excessive molding, or a tense caput, or, finally, the pelvic floor may be so tense that it precludes proper digital exploration In such, when conditions demand certainty of diagnosis, and external palpation is difficult or impossible, the necessity arises of passing the hand into the lower uterine segment, under deep anesthesia, before the position may be accurately fixed In such cases, the rectal offers no more indefiniteness than the vaginal route It has not been my fortune to encounter a compound presentation, during the period I have employed the method as a routine, but I am convinced that it will offer almost the same certitude of recognition as will the vaginal examination, especially if the compound presenting part be laterally or posteriorly directed It has been determined that the maneuvers of Müller and Kerr may be applied through the combined abdominal and rectal palpation when the vaginal is replaced by the latter This is of fundamental importance, in labor, when the woman has a pelvic contraction and it is necessary to determine approximately the cephalopelvic adaptability when a cesarean section is under advisement The station of the presenting part, whether floating, fixed, engaged or deep in the pelvis, all may be as positively estimated by rectal as vaginal examination Ries has found that the pulsations of the cord in the vagina may be felt through the rectovaginal septum Even the still cord may be outlined in the same manner, showing the possibilities in the diagnosis of a prolapsed cord

The Membranes—If there is any distention of the amniotic sac by liquor amnii it is possible to determine the fact In a few instances it has been possible to rupture the membranes by firmly pressing on them through the rectovaginal septum at the height of a contraction If there be a very scanty amount of forewater, or it is practically absent, one necessarily must be kept in ignorance, but it has happened in a few instances (as in oligohydramnios) that the only way to determine the presence or absence of the amniotic sac is to open the vagina widely with specula and inspect the head to ascertain if it be covered with the chorion

Nowhere does the efficiency of rectal examination stand out so distinctly as in the control of women who have a relative indication for cesarean section In such, it is not good obstetrics, usually, to perform the section until by a test of labor it has been positively proved that the disproportion is so material that an intact living child cannot pass We all know that the surest prognostic aid in determining the outcome of a cesarean section is the fact that vaginal examinations have or have not been made within a period of two or three days of the operation It cannot be reiterated too often and emphatically that the contamination produced by one or more vaginal examinations during the labor influences the outcome of a cesarean section more unfavorably than does any other factor except exhaustion or ill-advised attempts at delivery It is possible to determine the nonengagement of the head by abdominal palpation and rectal examination with absolute positiveness therefore, it is utterly needless to enter the parturient canal during the period of watchful expectancy

Rectal examination at or near term is by no means the obstetric limit to the procedure, for it is efficacious at any period of gestation In threatened abortion, or abortion in progress, the rectal touch will furnish many of the data requisite for an intelligent conduct of the case up to the point of operative intervention

TECHNIC

The woman should be given an enema before examination Preferably, she should be on a table, or at least she should lie across the bed in the lithotomy position, with the buttocks quite to the edge, so the gluteal groove will not be in a depression of the bedding A sterile rubber glove should be employed, for even though the finger enters a contaminated cavity it is not good practice to use a glove which may have infective matter on it The finger should be anointed with sterile petrolatum or other unguent, and then should be passed through the anus slowly and carefully At the same time the other fingers should be flexed in order that they may not accidentally enter the vulvar orifice The various movements of the fingers should be slowly made, that the minimum of discomfort may be caused Rarely will there be any pain, even if hemorrhoids are present, in fact, the average discomfort is no greater than when a vaginal examination is made Generally, the rectovaginal septum is so lax that the examining finger may move with great latitude The only time I found the method positively indefinite was in a woman who had had proctitis, with secondary contraction of the wall

DANGERS

Very possibly objections to the method may be developed in the course of a broader experience — objections which may be valid in a very circumscribed field, and limited, in all probability, to conditions in the rectum itself As we now see it, the danger is that the inexpert may allow the fingers or thumb to slip within the introitus during certain manipulations This will be entirely obviated by keeping them flexed The method is contraindicated when the termination of the labor is imminent, for fear, if haste is necessary, the attendant might forget to change the glove, or which is quite as bad, attempt to wash the glove on his hand The glove, after use, invariably should be boiled Preferably, this glove should not be used in the conduct of the labor, even though it has been sterilized by prolonged boiling In the old days when the method was introduced there was an obvious objection to it, as the examining finger necessarily was fouled, and sterilized with difficulty Esthetically, also, it was not agreeable to contaminate the finger with fecal matter Today, with the use of rubber gloves, there can be no such objection

The basic principles on which this paper is founded were obtained in the course of my personal experience and practice In substance they form the essentials of my teaching of pelvic examination in the class room In the obstetric clinical instruction of the students of Rush College, rectal examination is practiced nearly to the exclusion of vaginal examination Those who have charge of this work are convinced that the students have had no sacrifice of a means of teaching since vaginal examinations were eliminated On the contrary, with the increased license of examination, the students have had an increased opportunity of pelvic investigation

Since Dr N Sproat Heaney introduced this procedure in the dispensary clinic, the students have enormously augmented their practical knowledge of the phenomena of labor — are infinitely better placed than were the students who were permitted to make a limited number of vaginal examinations in a former period

CONCLUSIONS

1 The discovery of the possibilities of rectal examination in labor by Kroenig and Ries is one of the most important contributions to modern obstetric medicine of the last generation

2 There must be a complete revision of the chapter on pelvic examination in obstetric textbooks Adequate presentation of the value of rectal examination must be stated Vaginal examination should be made subordinate to rectal touch

3 While, at the present time, rectal examination does not give us the means of measuring pelvic size, it is of great value in estimating the factors situated in the posterior half of the bony pelvis

4 In almost every direction, under appropriate conditions, rectal examination is as definitive as vaginal, if combined with abdominal palpation

5 The ease or difficulty of rectal examinations are commensurate to the ease or difficulty which encompass the vaginal ones, and are dependent on the same factors

6 Rectal examination is an utterly innocuous procedure in labor, whereas, vaginal examinations are always potential sources of infection to the woman

7 Rectal examinations are peculiarly appropriate to those women who are to receive the test of labor in relatively contracted pelves when a cesarean section may possibly be needed

8 Vaginal examinations should be made in labor
only whepaifs· some special reason, the rectal findings
the perineum, (b) 'nconclusive
(d) recognition of it can be said of rectal examination
ment — placenta praee conduct of normal labor with the
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2 Ries, Emil Zentralbl f

3 Menge F Winckel's H

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THE RAT A CARRIER OF A DYSENTERIC AMEBA *

KENNETH M LYNCH, M D
CHARLESTON, S C

The purpose of this communication is to record observations incriminating the rat (*Mus norvegicus*) of a possible new rôle in the dissemination of disease, the details of which go to show that

1 The rat (*Mus norvegicus*) suffers from spontaneous amebic dysentery similar to that occurring in man

2 This apparently occurs in endemic foci in Charleston, S C

3 The ameba found in the cases of rat infection here reported are indistinguishable from *Endamoeba histolytica*

4 This rat may be infected with *Endamoeba histolytica* by allowing it to eat human feces containing this parasite

5 The disease thus produced is practically the same as that occurring in man and from spontaneous infection in rats

6 This infection, spontaneous and experimental, may be transmitted from the infected to the healthy rat by close association, that is, living, eating and drinking together

7 The rat is a possible and probable disseminator of dysenteric amebas pathogenic for man

The details of the study from which these conclusions are drawn are as follows

During the course of experimental transmission of the *Trichomonas intestinalis* to rats by feeding them human feces containing these parasites,[1] a large brown rat was given feces containing *Endamoeba histolytica* in addition to the trichomonas At the end of three weeks the rat was noticed to be getting thin in spite of good feeding, and to be sluggish whereas he had been active and vicious His emaciation became more noticeable in the course of a few days, and at the end of a month he appeared to be very sick and had developed a mucous diarrhea This passed fecal matter, when examined fresh and warm, contained, in addition to the trichomonas and leukocytes, desquamated epithelium and shreds of intestinal mucosa, and red blood cells, numerous active and resting amebas identical with those in the feces with which he was fed His feces as well as that of all the other animals used in this study had been examined for amebas before feeding and none found His symptoms, sluggishness dyspnea, turning of the hair, loss of appetite and diarrhea continued until he died on the thirty-second day after feeding

Postmortem examination revealed a general anemia, acute mesenteric lymphadenitis, late perilobular cirrhosis of the liver with microscopic periportal abscesses in which no cells like amebas were found, jaundice of the liver and kidneys The condition of the liver was probably due to the extensive infiltration with cysticerci and secondary infection The following was the condition of the alimentary canal

Stomach Considerable mucus formation, otherwise normal

Small intestine Distinct acute catarrhal enteritis, fluid mucinous contents, no ulceration, no amebas present but many lamblias

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* Read before the Medical Society of South Carolina Nov 15 1915

[1] Lynch K M The Trichomonas as a Parasite of Man and Certain Lower Animals, Tr Pan American Med Cong, 1915

Cecum. Semifluid yellowish mucinous contents containing the *Trichomonas intestinalis*, epithelium and mucosal portions, red blood cells, leukocytes, and large numbers of active and encysted amebas. The wall was the seat of an acute ulcerative inflammation practically identical grossly and microscopically with the more acute type of human amebic colitis, with irregular ragged undermined acute ulcerations, having necrotic edges and containing fecal matter and granular detritus in which the amebas were very numerous, and between which the mucosa was the seat of an acute catarrh.

Remainder of the large intestine. Acute catarrhal colitis, no ulcers, contents the same as that of the cecum.

The amebas in this animal and in the feces with which he was fed were recognized as *Endamoeba histolytica* by the following distinguishing features, according to Craig:[2] Size, from 20 to 60 microns, pseudopodia, large and blunt or slender finger-like, active, ectoplasm distinct, nongranular, refractive, endoplasm, granular, containing numerous noncontractile vacuoles and occasionally a red blood cell, nucleus indistinct, when at rest possessing a distinct clear shell enclosing the hyaline refractive body, with Wright's stain, ectoplasm dark blue, endoplasm light blue, nucleus pale red or pink.

This occurrence brought to my mind the habits of the rat, and his liking for feces and also for almost any and all of our food and drink. Failing to find any record of experimental transmission of dysenteric amebas to rats, although it has been done with other animals, notably kittens,[3] I instituted experiments to determine whether it could be done with any constancy by feeding, as this method alone could be of importance in incriminating the animal of possibly disseminating the infection.

To date I have fed about twenty rats with feces of as many human beings containing dysenteric amebas, active and in the resting stage. These include both the brown rat and the pet white rat (*Mus norvegicus*). Four of these have followed the same course as the first, that is, at about the end of the first month after feeding, they became sick, showing dyspnea, loss of appetite, emaciation, turning of the hair, and sluggishness, and developed a mucous diarrhea from an acute ulcerative inflammation of the cecum and acute catarrh of the remainder of the intestine. Some of them died after a few days of the well-marked symptoms, while others were killed for purposes of better study. Amebas identical with those administered were recovered from the large bowel, particularly the cecum, to which the ulceration was limited. While all of them exhibited this ulceration of the cecum, in some it was more severe and diffuse and acute than in the others and in the usual human case. None have shown any involvement of the other organs except in the nature of toxic degenerations. Three of these rats were white and the fourth brown.

What will occur in the remainder of the animals under experimentation remains to be seen, as none have yet arrived at the usual time of onset of symptoms.

In order to determine whether the infection could or would be transmitted from rat to rat, feces of the first were fed to another, and this one became sick with the usual symptoms at the end of two weeks, exhibited the ameba in stools and cecum, died shortly and showed an acute diffuse ulcerative inflammation of the upper large intestine. Sufficient time has not yet elapsed to show whether the third in this series, which was fed the feces of the second, will suffer in like manner. Also, a noninfected rat was placed in the cage with one which had been fed, but some time before it developed any symptoms of disease, to see if possible contamination of food and drink would infect the other. One of these developed the disease and died of it ten days after its fellow had suffered a like fate.

For the purpose of obtaining wild rats for the work, and also with the hardly formulated idea of searching for spontaneous amebic infection, these animals were trapped in different sections of the city of Charleston. The first source, a grain house on the water front, proved free of the infection. I have had about fifty rats from this place, have killed a number for examination, and failing to find amebas in them, have selected all those used for the feeding experiments from this source.

The first rat caught at the second place and brought to me after it had been killed exhibited as typical an example of amebic inflammation of the cecum as I have seen in a human being. Other than being less acute, and it must be remembered that the animal did not die of it, the lesion was practically the same as that seen in the first experimentally produced. The ulceration was limited to the cecum, was of irregular serpiginous character, undermined, with ragged edges, contained granular material and fecal matter, and the intervening mucosa was the seat of a subacute catarrh. The small intestine was not altered, and the lower large intestine had suffered a very mild catarrh. The content of the large bowel was softer than usual, but the stool well formed.

An ameba indistinguishable from the *Endamoeba histolytica* was present in the large intestine, a few in the rectum, many in the cecum, and large numbers in the material from the ulcers. It possessed the characteristics in size, activity, differentiation of ectoplasm from endoplasm, indistinctness of nucleus, appearance of pseudopods, resting stage, and staining properties. After direct comparison of the parasite obtained from this rat, and from others hereafter mentioned, to *Endamoeba histolytica* from human beings and experimentally infected rats, I am unable to tell them apart and conclude that it was *Endamoeba histolytica*.

The house in which this rat was caught was a negro habitation in a negro community, and while it had water closets and sewer connections, unfortunately these things do not always mean proper sewage disposal among these people and in such houses in Charleston. I have learned of a house within a few numbers of this one in which the water closet had been out of use and the several families living there using a basement for the purpose for some time. I also know of a case of amebic dysentery which came from this locality, apparently originating there. The suggestive relationships are obvious.

From this place, I have since obtained another rat in the same condition as the first, and from feeding the cecal contents of the first to two young white rats, have been able to produce the same condition in them as occurred in the previously described experimental infections from human feces, the same colitis, diarrhea and ameba, and death at the end of about one month.

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[2] Craig, C. F.: Entamoeba Tetragena as a Cause of Dysentery in the Philippine Islands, Arch. Int. Med., March, 1911, p. 362.

[3] Sellards, A. W., and Baetjer, W. A.: Bull. Johns Hopkins Hosp., February, 1915, p. 45.

From two other localities of similar nature but in different parts of the city, I have obtained five other rats with amebic colitis, one from one place and four out of six obtained from the other. In these five the ulcers were small, irregularly rounded, with elevated undermined edges, only from three to six or eight in the cecum, and the remainder of the intestine normal. The same ameba was present, mainly in the resting stage in the rectum, but active in the cecum and especially in the ulcers. In another of the six, the ameba was present, and although there was some desquamation of epithelium and catarrh of the cecum and small points of microscopic erosion of the mucosa, there were no gross ulcers. None of these rats exhibited amebic infections of other parts of the body.

I am now undertaking a search for the extent of the distribution of this spontaneous infection, both in the city and in the rural districts, and am also looking for possible human endamebic intestinal infection from the same localities, an indication of which is already given in the case from the second place mentioned.

At the same time the experimental work will be continued and any further observations made known.

The *Endamoeba histolytica* is a frequent inhabitant of the intestine of the negroes in Charleston. The possible relationship is interesting.

The rat has a liking for human feces and he is no respecter of our food and drink. Stiles[4] believes that man may become infected with lamblias through eating food which has been soiled by the excrement of rats. The important possibility of the same manner of transmission of dysenteric amebas to man is obvious.

Stiles fails to mention any knowledge of amebas in rats, neither have I found it recorded from any other source.

The burden of the sins of the rat and this menace to the health of man seem certainly increased by the incriminating evidence included in these observations.

SYPHILITIC IRITIS WITH CONDYLOMAS

REPORT OF THREE CASES

WALTER BAER WEIDLER, M.D.
NEW YORK

The three cases here presented are of such a nature that many authors would regard them as gumma of the iris, but as all of these lesions were seen during the secondary stage of syphilis, it would seem that they should be more properly diagnosed and classified as papules or condylomas of the iris.

Papular iritis is often called iritis gummosa. This is because papules of the iris were always regarded anatomically as gummas, and it is often impossible to differentiate between these syphilitic formations even with the microscope. I believe that in the very virulent or malignant form of syphilis, it is possible to have true gumma of the iris during the secondary stage. It would seem that it is more a matter of size and the period of its appearance that makes one lesion a papule and the other a gumma. It is my opinion that gummas are rarer than papules. The papules often occur in numbers, whereas the gumma is single and perhaps more often seen near the ciliary body.

Case 1.—Mr. J. T., aged 45, chauffeur, had chancre of the penis seven months before he came to the Manhattan Eye and Ear Hospital, Dec. 2, 1913, with the history that for the past ten days the left eye began to be red and painful. He had no treatment for the eye conditions and only a short period of treatment for the syphilitic infection. There was considerable photophobia and lacrimation, and the lids of the left eye were kept closed. There was considerable haziness of the cornea, more pronounced in the lower half. There was a very severe congestion and engorgement of the superficial and deep ciliary vessels, giving a violaceous color to the pericorneal region. The iris was muddy and discolored. The pupil was contracted and did not respond to light, accommodation or convergence, but the tension was normal. The vision was reduced to counting of fingers at 3 feet. There was a condyloma of the iris down and in, and it seemed to be in the anterior portion of the iris stroma. It was grayish-yellow, about 5 mm. at its base, extended forward in the anterior chamber and was in contact with the posterior surface of the cornea. There were a number of small blood vessels visible over the growth.

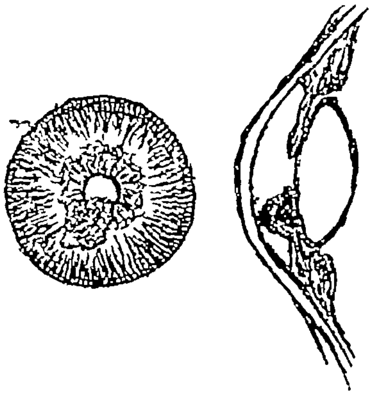

Fig. 1.—Left eye, growth was down and in reaching forward to posterior surface of the cornea. Pupil contracted and did not respond to light.

The Wassermann test was positive (++++). The patient refused to have an injection of neosolvarsan, and was put on the iodid-mercury treatment, and after ten days the mass began to get smaller, the pupil began to dilate somewhat, the cornea was entirely clear, the bulbar congestion was much less, and the iris about the same color as its fellow. The condyloma or papule reduced to one fourth of the original size, and two weeks later the eye was absolutely quiet within a vision of 20/70.

Case 2.—Mr. L. M., colored, aged 23, elevator man, gave the history of having chancre on the penis seven months previous, and has been under treatment for syphilis at St. Luke's Hospital, receiving mercurial injections. Presented himself at the Manhattan Eye and Ear Hospital, Feb. 27, 1914, stating that twelve days before the right eye began to give him pain and this was accompanied with photophobia and lacrimation. He had no treatment at any time for the eye conditions. There was at this time considerable swelling of the lids with marked photophobia and lacrimation. The cornea was clear, there was a very pronounced pericorneal injection, and the deep ciliary vessels were very much engorged. The eye was very tender over the ciliary region. The aqueous was clear, the anterior chamber normal, and the general appearance of the stroma layer of the iris was unchanged, except up and out, where the stoma was decidedly elevated. At the pupillary edge of the iris, up and out, there was a whitish-gray exudate which seemed to protrude between the stroma and retinal pigment layer of the iris. This exudate had apparently attached itself to the anterior capsule of the lens, and the mass was protruding forward into the anterior chamber about 3 mm. There was only this single papule or condyloma with slight or no inflammatory changes in the iris. The vision of the right eye was 20/40 ??, of the left eye 20/20. The pupil was 3 mm. and did not react to the light, showing the presence of synechiae. The von Pirquet was positive, and there was the history of one of his brothers dying of tuberculosis. The Wassermann test was also positive (++++).

March 15, 1914, neosalvarsan was given, and the photophobia, lacrimation and pain entirely disappeared in thirty-six hours. The superficial and deep injection was much less. The tumor mass was rapidly reduced to at least two-thirds its former size, and the pupil dilated fully and freely There are still the synechial remains on the capsule of the lens, but no trace of the condyloma remains

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[4] Stiles, C. W.: The Rat and Its Relation to Public Health, Publication *U. S. P. H. S.*, 1910, p. 89.

Case 3—Mr P E, aged 26, Irish, gave a history of having chancre about three months before and had taken treatment for syphilis for a few weeks He came to my clinic at the Manhattan Eye and Ear Hospital There was some swelling of the lids of the right eye, marked pericorneal injection involving the ciliary vessels The cornea was slightly hazy and the aqueous cloudy The iris showed effects of inflammation being discolored and the pupil 2 5 mm Down and out there was a circumscribed elevation about 3 by 4 mm at its base and about 2 5 mm high, extending forward toward the posterior surface of the cornea but not in contact. This mass was pinkish-gray, and no distinct vessels were noted, but there was apparently some synechia formation There was some photophobia and lacrimation The Wassermann test was positive (++++) Two days later neosalvarsan was given and after thirty-six hours a decided decrease in the size of the condylomas was noted Inside of four days there was almost complete absorption of the mass The iris cleared and the inflammatory symptoms were entirely relieved. A small synechia remains on the outer side of the iris above the location of the condyloma

The very rapid response of this special syphilitic lesion in Cases 2 and 3 to the neosalvarsan was remarkable, and its use would seem to be especially indicated in this sort of syphilitic manifestation

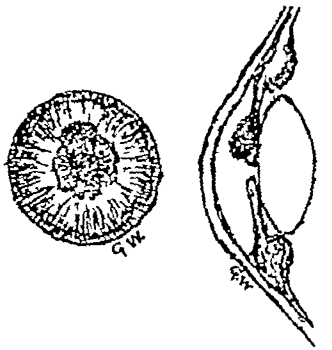

Fig 2—Right eye growth was up and out but did not reach to the cornea as in Figure 1 There was a grayish white exudate between the retinal pigment layer and the stroma of the iris

The diagnosis of the syphilitic lesions of the iris has been made much easier and surer by means of the serologic test Where a definite history of the syphilis can be obtained, diagnosis of these lesions is a simple matter, but in the cases in which such a history is not obtained, the Wassermann reaction has added a most important factor in the diagnosis It might be well to mention here that at times it has been difficult to differentiate between a papule or condyloma and a tubercle of the iris It is in this sort of a case that the von Pirquet test and the subcutaneous tuberculin test become of great importance Recently I have seen several cases of tubercle of the iris which have been treated for syphilis of the iris in spite of a negative syphilitic history and a negative Wassermann reaction with no improvement For those who have not been especially interested in the tuberculin tests and therapy, I can readily see why such a line of treatment would be persisted in It might be argued that previous antisyphilitic treatment has been employed, hence the negative Wassermann, or that the patient may deny syphilis for reasons best known to himself, and therefore without any further search for the cause, antisyphilitic treatment is used

The microscopic examination of the iris and the ciliary body when affected with gumma or condyloma reveals about the same changes as are noted in chronic inflammation of these tissues There is nothing definite and characteristic which would make it possible to say that syphilis was the factor which caused the growth The blood vessels show fairly constant involvement and microscopic changes in syphilis of the iris There is an endarteritis especially of the smaller vessels with an apparent increase of the endothelial cells This is partly due to the increase of pressure on the highly sensitized cells which line the lumens of the vessels The adventitia also shows a proliferation or new deposition of cells with a marked increase of epithelioid cells outside of the adventitia

Fuchs found the iris of normal thickness infiltrated with round cells, and these chiefly in the anterior limiting membrane This inflammatory exudate of the leukocytes was also in the reticulum, and in some of his cases he found typical giant cells present The presence of giant cells has been noted by other observers, but in none was there any caseation present There are always a number of capillaries seen inside or around these syphilitic nodules, which is not the case in the tubercular nodules of the iris

131 East Sixtieth Street

SUPPURATIVE CHOLECYSTITIS FROM THE PARATYPHOID BACILLUS

REPORT OF A CASE

LUCIUS E BURCH, M D
Fellow of the American College of Surgeons Professor of Gynecology and Dean Vanderbilt University Medical Department
NASHVILLE, TENN

History—The patient is married, aged 25, occupation electrician His family history is unimportant, except that he had one aunt on the paternal side who died of tuberculosis at the age of 40 He had the usual diseases of childhood, including spinal meningitis He never had pneumonia typhoid fever, tonsillitis or rheumatism. At the age of 13 he developed malaria of the tertian type, which recurred for three summers He uses tobacco to excess and occasionally beer and whisky Venereal history is negative About once a year he becomes badly constipated, and this is usually associated with cramps in the abdomen These cramps continue for several days, unless relieved by a purgative His digestion has always been perfect. There is no history of any accident or injury, although he has a cataract of his left eye, which has produced a loss of sight in that eye

Monday morning Aug 16, 1915 he went to his work in his usual good health In two hours time however, a severe headache came on which was followed by pain in the abdomen and this in turn by nausea He continued at his work however, for the remainder of the day and returned home about 5 30 p m About 6 o clock the pain in the abdomen was so severe that he called his physician Dr W E Reynolds After making a careful examination Dr Reynolds told him that his symptoms were suspicious of intra-abdominal trouble, and asked to bring in a surgeon as a consultant to which the patient consented I saw the patient for the first time in consultation with Dr Reynolds about 9 p m He was then complaining of pain on the right side of his abdomen The temperature was 102 and the pulse was 100 An abdominal examination showed a marked rigidity of the right side and a localized tenderness most acute midway between the navel and costal margin about 2 inches from the median line He had however some tenderness all over the right side. The symptoms were rather suggestive of appendicitis, but we decided to wait until morning Meanwhile he was ordered to abstain from all food, liquids or medicine He continued to suffer in the night, and the next morning when his physician saw him, a localized pain was found in the region of the gallbladder This pain continued with moderate severity during the forenoon. When the physician examined him again at midday, it was discovered that the localized pain had shifted from the region of the gallbladder to the region of the appendix. The temperature at this visit was 101, and the pulse had gone up to 120 He was advised to go to the hospital for a more careful study of his case, and an operation, if necessary

He was brought to my infirmary about 8 p m His pain was somewhat better, although there was a marked rigidity on the right side and a point of acute tenderness two finger breadths beneath the costal margin on that side A urinalysis was made, which was negative Blood examination revealed hemoglobin 85 per cent, white blood cells 12,000 Temperature, 99 6 We had now had the case under observation for twenty-four hours, and as no appreciable improvement was present and as the symptoms were very suggestive of an intra-abdominal lesion, either the appendix or the gallbladder, an operation was advised, to which the patient consented

Operation and Result—A right rectus incision was made in order that a thorough exploration could be carried out The appendix was enlarged and somewhat inflamed We felt, however, that this could not be the entire cause of the trouble, and further search of the abdominal viscera was instituted, although the appendix was removed The gallbladder was found in a state of marked distention It was quite red, covered with lymph in numerous areas, and on the fundus were several small patches that were almost black A needle was introduced, and about 5 ounces of cream-colored pus were drawn off The gallbladder was then packed off, opened, cultures from the interior were taken, and a drainage tube inserted and the abdomen closed The next morning the patient stated that he had been perfectly comfortable since he regained consciousness The temperature, however, was 102, but the pulse had dropped to 100 The drainage from the gallbladder was copious and of a black color

For the next few days the patient continued to feel well His abdomen was flat and he complained of no pain at all except a headache The temperature continued to run between 103 in the afternoon to 101 in the morning On the fifth day after the operation the temperature was 104 and a blood count was made which was as follows red blood cells 6,200,000, white blood cells 8,000 A careful examination of the patient's throat, lungs and abdomen was made, all with negative result The Widal was also negative The laboratory report at this time had not been received, and for this reason we were unable to account for the continued temperature with almost a normal blood count The temperature continued to drop gradually, and reached the normal on the morning of the tenth day after the operation It continued to run up in the afternoon for four days, ranging from 99 to 100 2 Fourteen days after the operation, for the first time, the temperature remained normal for the whole twenty-four hours, and continued to do so for the remainder of the patient's stay in the hospital The wound healed by first intention, the tube was removed at the end of the tenth day, and the drainage tract was closed at the end of three weeks At the end of five weeks and a half the patient returned to his business, feeling in first-class condition, although a little weak

Laboratory Report—The following report was received from the Department of Bacteriology, Vanderbilt University, Medical Department

"Cultures made from the pus obtained from the gallbladder showed that there was but one organism present This organism was found to be a short bacillus, irregular in length, actively motile, and gram-negative When grown in litmus milk the medium became acid after twenty-four hours, but by the twelfth day had become alkaline again The milk was not coagulated There was marked gas formation after twenty-four hours in glucose bouillon On Russell's medium the surface was bluish-white in appearance, while the lower layer became red and contained considerable gas On endomedia the colonies formed a pale, bluish-white, translucent growth

"The bacillus was not agglutinated by stock serums which had been obtained from patients suffering from infection with the typhoid bacillus and with the paratyphoid bacillus B, but was strongly agglutinated by the serum from a patient suffering from infection with the paratyphoid bacillus A.

"The serum of the patient did not agglutinate stock culture of the typhoid bacillus or the paratyphoid bacillus B, but did agglutinate the paratyphoid bacillus A, in a dilution of 1 200

"From the cultural reactions and the agglutination tests, the organism isolated in pure culture from the pus is probably the paratyphoid bacillus A"

COMMENT

The interesting feature of the case was the early involvement of the gallbladder, as the first symptoms presented by the patient were due to the cholecystitis I am unable to find in the literature of paratyphoid how early and how often cholecystitis occurs With the typhoid bacillus it is not unusual, but comes up later in the disease I am of the opinion that a careful culture made in all cases of noncalculous suppurative and gangrenous cholecystitis will clear up, to a great extent, the uncertainty concerning the etiology that now exists in these conditions

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PAINFUL WEAK FEET

REPORT OF CASE

H Winnett Orr, M D, Lincoln, Neb

Many persons with very flat feet have no discomfort whatever They have no foot strain, and strain is what causes all, or nearly all, the distress and secondary symptoms in these cases Conversely, in those who have pain, to relieve the strain is to cure the patient Usually, a period of rest, a change of shoes (especially shoes that are too tight, too narrow, or too short) "arch supports," or more scientifically constructed braces, or a combination of several of these measures, will afford the patient great relief I encounter a considerable number of patients, however, who have tried all of the above methods and who are still not relieved

CASE REPORT

History—A young man, 23 years of age, consulted me last July with a history of disability on account of painful feet, which had been increasing for about three years From January to July, 1915, he had been able to do only three weeks' work at his trade, that of a foundryman His feet were swollen and acutely tender He had leg ache, with pain in the knees and hips At times there was much cramping of the muscles of the legs—so much sometimes that he could not sleep at night He had a family dependent on him and was extremely anxious to resume work The feet were markedly everted and there was pronounced spasm of the peroneal muscles He came to me seeking braces, but I dissuaded him from this and advised tenotomy of the peronei with a period of fixation of the feet in inversion in plaster of Paris

Operation—He accepted this advice and the operation was done the next day An attempt to forcibly invert the feet under anesthesia before tenotomy was not successful Accordingly all of the peroneal tendons were divided just back of the external malleolus and then the feet could easily be strongly inverted

Plaster casts were put on with the feet in this position and the patient kept in bed for about two weeks Then he was allowed to get around, still wearing casts for a total of six weeks During the seventh week after operation the casts were removed, ordinary shoes were put on, and he went home

Result—He now (November, 1915) reports that at first he walked with his feet in an extremely inverted (overcorrected) position, but that there is only a slight tendency in that direction in one foot at present

He stands and walks perfectly well and can even walk on tip toe (an impossible feat for most of these patients) He also relates that one day recently he husked corn for an entire afternoon He wore ordinary shoes, following the wagon over rough ground with no discomfort except that he felt a little tired afterward

He is resuming his work as a foundryman less than four months after operation and following three years of great disability

A comparison of results by this method with those of other methods—especially forcible correction without tenotomy—leads to the conclusion that peroneal tenotomy (or perhaps still better, resection of a portion of the peroneal tendons as suggested by Robert Jones) is much superior The operation must of course, be carefully done under strict asepsis and the after-care faithfully carried out or it will not fully succeed If properly done however, great relief may be had for a class of patients who suffer great distress and extreme disability and who will not be relieved in any other way

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REPORT OF A CASE OF MERCURIC CHLORID POISONING

WITH PARTICULAR REFERENCE TO ITS TREATMENT

HARRY M. KAY, M D MADISON WIS

C. W man aged 47, July 3 1913 at 2 p m took five tablets 7½ grains each of mercuric chlorid. Fifteen minutes after taking this drug he was attacked with a desire to vomit and barely reached the toilet room when violent vomiting began Three or four spasms occurred at the same time and profuse perspiration started This continued for about fifteen minutes when there was a respite of about ten minutes Then another attack of violent vomiting occurred, this attack being accompanied by simultaneous involuntary movements of the bowels This lasted for about thirty minutes His mouth began to fill with frothy saliva which when expectorated would remain connected to the mouth by a silver thread Attacks of vomiting and diarrhea less violent, continued to recur at longer intervals The movements of the bowels took place at intervals of fifteen or twenty minutes About 8 p m., the patient drank some cold water, which seemed to give him considerable relief During the entire night, he was subject to occasional spells of vomiting and involuntary movements of the bowels.

July 4 vomiting was much less frequent. The bowels still moved involuntarily, and there was continuous salivation Sweating ceased during the night. Cramps did not recur The patient drank some lemonade at noon and again at night, this seemed to give him considerable relief

July 5 the symptoms continued, but were less violent, vomiting occurring but four or five times a day In the morning the patient drank a pint of cold milk, at noon-time he took lemonade, between times ice-water, at evening a bottle of beer

July 6 vomiting had almost ceased. There was one movement of the bowels

July 7, the patient felt considerably better There was one attack of vomiting Salivation still continued The bowels moved about every hour, the stools were of the consistency of mucus and blood. Defecation was painful.

July 8, the patient did not vomit. The diarrhea was continuous The stools were bloody as on the previous day

The foregoing history was obtained from the patient two months later

July 8 five days after he had taken the poison I was called to see the patient. His appearance much resembled that of a person in a uremic condition. He was semiconscious, he would answer an occasional question and go back to his partial slumber, the pulse was 120, temperature 99 4 and respiration 12. The patient gave me a history of *complete anuria for five days*

The patient was taken to the hospital. On arrival he was immediately given a hypodermoclysis of 3 000 c.c. normal salt solution and put in a hot pack for twenty minutes Catheterization resulted in 1 ounce of bloody urine There was a good reaction from the skin Profuse perspiration lasted about half an hour During the night the patient slept very little One of the troublesome complications with which we had to deal was hiccups, the patient hiccuped constantly during four days and nights, this was controlled somewhat by an occasional hypodermic of 1/100 grain of nitroglycerin

July 9 the patient was again catheterized, and 2 ounces of urine resulted Examination showed a faint trace of albumin, and a few pus cells and blood cells There were no casts Specific gravity was 1 008

Every day for the ten following days, he was given from 2 000 to 3 000 c c normal salt solution hypodermoclysis and about the same quantity of normal salt solution proctoclysis Following the hypodermoclysis daily, the patient was put into an electric bath cabinet for from twenty to thirty minutes The reaction of the skin was very marked The patient was returned to bed and placed between blankets and the perspiration continued for two or three hours The patient was catheterized the first three days but on the fourth day he voluntarily voided 4 ounces of urine. The examination of this urine showed considerable albumin, and many granular and hyaline casts The blood pressure at this time was 180 mm

On the fifth day, the patient voided 10 ounces of urine on the sixth day 15 ounces and on the seventh day 20 ounces From then on the voidance of urine was about normal The continuous examinations showed albumin and also numerous hyaline and granular casts When the normal flow of urine was established, he experienced relief from considerable pain in the region of the kidneys which had persisted since the early stages of the case.

During the first two weeks of his stay at the hospital it was necessary to give considerable attention to the condition of the bowels The first few days there was a constant diarrhea the stools having the consistency of mucus and blood This we tried to correct with large doses of bismuth subnitrate and sodium bicarbonate Later, constipation followed and was treated with mild enemas

The mouth also was a source of great trouble. Fortunately the patient had a partial plate which was removed and the gums treated. There was also constant salivation Burning of the mouth was treated with alkaline mouth washes and also some potassium chlorid solution The cardiac weakness and special symptoms were treated according as they developed No morphin was given at any time Occasional doses of 5 grains of veronal were given

Diet consisted of milk, egg albumin, cereals cream toast, etc.

The patient left the hospital July 22 apparently in good condition The urinary examination at that time showed traces of albumin a few blood cells and an occasional granular cast Blood pressure was 130 mm leukocytic count 8 000 red cells 4 300 000 Two weeks after the patient s discharge he was back at his work About a year after his discharge I was fortunate enough to procure a specimen of urine Examination showed that there remained no ill effects from the poison I have not seen him since but recently heard that he is in Milwaukee going about his work regularly and apparently in perfect health

I wish to acknowledge my indebtedness to Prof. A. S Loevenhart and Dr Leopold Schumacher for their assistance and cooperation during the progress of the case

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Tuberculosis Number—The September number of the Illinois *Health News* the official monthly bulletin of the Illinois State Board of Health is devoted entirely to the cause prevention and cure of tuberculosis. The pamphlet s written for the benefit of the laity among whom it is intended to circulate and recites in easily understood language the facts concerning this disease It contains a number of pointed cartoons which emphasize various phases of the tuberculosis problem that should appeal strongly to the readers of the bulletin Emphasis is laid on the danger of employing or depending on any so-called cures for consumption done up in a bottle

Therapeutics

TUBERCULOUS MENINGITIS

Before discussing this almost hopeless disease, a review of our present knowledge of the physiology of the cerebrospinal fluid will enable us better to understand the causes of, and the danger from, cerebrospinal pressure

We may epitomize our knowledge of this fluid as follows

1 The cerebrospinal fluid is a secretion of the cubical cells of the choroid plexuses of the lateral ventricles and of the perivascular lymph spaces[1]

2 Some barrier prevents most medicaments from reaching the cerebrospinal fluid by way of the blood stream, though bile pigments and sodium salicylate have been found in the cerebrospinal fluid

3 The whole normal quantity of cerebrospinal fluid may be secreted in three or four hours[2]

4 Normally the fluid has free passage from the lateral ventricles to the third ventricle, then through the aqueduct of Sylvius to the fourth ventricle, and from there is distributed through foramina into the subarachnoid space, and from this reservoir over the cerebrum, the cerebellum and downward into the spinal arachnoid

5 The fluid is absorbed from the cerebrospinal canal by both blood and lymph vessels, but is mostly taken up by the veins, hence any obstruction to the venous circulation in the brain or meninges is more serious than a lymphatic obstruction in the same region

6 A slowly developing cerebral pressure (compression) is better tolerated than a rapidly developing pressure Also, rapid loss of pressure (decompression) is often dangerous There is danger, therefore, from too rapid injection of an antitoxin or other fluid, and there are sometimes serious consequences from a too rapid withdrawal of cerebrospinal fluid

7 The symptoms of any form of meningitis are due to the toxins of the germ infection plus increased cerebrospinal pressure If this pressure is sufficient to cause coma, repeated spinal puncture will relieve it, and such drainage is theoretically indicated Of course, in spite of the relief from such pressure the patient may die of toxemia

8 Phenol (trikresol) preserved serums for intraspinal use have some elements of danger, although they are used with impunity by some clinicians

9 Brain tumors mostly cause increased cerebral pressure, not by their growth or by local pressure, but by obstructing venous drainage of the cerebrospinal fluid[3] Edemas of the eye grounds and choking of the disks seem to be caused by pressure in the optic nerve sheath, due to venous obstruction

10 Dandy and Blackfan[4] have shown that hydrocephalus may be of two types, due either to an obstruction to the outflow from the ventricles, or to decreased absorption from the subarachnoid space They also have found that there is but little absorption of surplus fluid in the ventricles Hence if absorption is delayed in the arachnoids, operative interference gives no outlook of success

Meyers[5] has given a numerical classification of the etiologic factors, symptoms and signs of 105 patients with tuberculous meningitis A brief review of these factors will be of interest As to sex, they were equally divided The ages varied from 5 months to 11 years, with about one-third of the patients between the ages of 2 and 3, while over half were between the ages of 2 and 5 The greatest number of these cases occurred in January and March (in Boston) The variations in the number of cases occurring in the different months would probably change somewhat with the region and the climate investigated, therefore a monthly analysis is of but little value Meyers found that 38 per cent of these children had had no previous diseases, in the remaining 62 per cent measles had occurred more frequently than any other disease The average duration of the disease from the time of the beginning of symptoms was seventeen days Meyers thinks the disease is not so rapidly fatal as it once was on account of lumbar puncture being now more frequently done, thus preventing early deaths from cerebral pressure

Lumbar punctures were done from one to seven times to a single patient He finds that lumbar puncture prevents convulsions, which become rare in the clinical history of the disease thus treated Meyers believes that the advantage of lumbar puncture is not only in relieving pressure, but also in eliminating a certain amount of toxin He has not found unpleasant symptoms to occur from the withdrawal of even a considerable amount of spinal fluid, even though it was not under high pressure

The rule of Meyers is to allow the spinal fluid to drain until it runs at the rate of from 10 to 12 drops per minute, and to draw off from 20 to 30 c c of fluid, depending on the pressure Eighty per cent of the cases showed increased pressure, but varying of course, in degree If the child lived, lumbar puncture was done once every forty-eight hours If the fluid removed at the first puncture did not show the organism causing the meningitis, the later punctures usually did, and tubercle bacilli were found in 21 5 per cent of these 105 cases of tuberculous meningitis

When there was no increase of pressure in the cerebrospinal canal, there were almost no disturbances of the reflexes, and there seemed to be no relation between the amount of pressure and the presence of convulsions, bulging fontanel or retraction of the head The fluid in this disease was never found really turbid, and was generally absolutely clear The cell count of the fluid varied from 24 to 960 per cubic millimeter, with an average of 198 This cerebrospinal fluid cell count seems to vary with the leukocyte count of the blood the greater the leukocyte count, the greater the number of cells in the spinal fluid The prevailing type of cell in the spinal fluid was the small mononuclear, ranging from 90 to 100 per cent in 67 per cent of the cases, and from 80 to 90 per cent in 20 per cent of the cases A fibrin clot was found in 70 per cent of the cases, and a positive globulin test in about 50 per cent The globulin content seems to vary directly with the cell count The first part of the spinal fluid withdrawn at each puncture has a different cellular content from the last part that is withdrawn, the first part giving the greater number of cells

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[1] Weed Jour Med Research, September, 1914

[2] Dandy, W E, and Blackfan, K. D An Experimental and Clinical Study of Internal Hydrocephalus, The Journal A M A, Dec 20, 1913, p 2216, Internal Hydrocephalus, Am Jour Dis Child, December, 1914, p 406

[3] Frazier New York Med Jour, June 27, 1914

[4] Dandy, W E, and Blackfan, K. D Internal Hydrocephalus, Am Jour Dis Child, December, 1914, p 406

[5] Meyers A E A Study of 105 Cases of Tuberculous Meningitis, Am Jour Dis Child, May, 1915, p 427

One fourth of the cases showed a leukocyte count of the blood between 10,000 and 15,000, the lowest count was 8,500, and the highest 48,000 Absence of eosinophils, as in some other diseases, is considered an unfavorable symptom

In those tested for the von Pirquet reaction, 63 per cent were positive

Twenty-five per cent of the cases gave a history of definite exposure to tuberculosis Thirty per cent of the cases showed lung involvement, and had more or less cough In 71 per cent the eye reflexes were abnormal, but in 29 per cent the pupils were equal, and reacted normally to light Thirty per cent showed normal patellar reflexes, and in 21 per cent the reflexes were absent There was a positive Babinski in 21 per cent Fifty per cent of the cases gave the Oppenheim sign Ankle clonus was rarely present Kernig s sign was present in 27 per cent of the cases Forty-three per cent showed some signs of paralysis, with strabismus as the most frequent form Seventy per cent showed some rigidity of the neck, and, late in the disease, there was definite stiffening of the limbs

While 39 per cent of the patients had a history of convulsions before entering the hospital, as stated above, spinal puncture seemed to relieve or prevent convulsions The subjective symptoms were drowsiness, indifference, and sometimes irritability Eighty-five per cent had vomiting as an initial symptom This vomiting had no relation to the food taken, and in no case was there projectile vomiting as is so frequently seen in meningococcic meningitis Pain was a frequent symptom

In 18 per cent of the cases the urine showed acetone, and sometimes slight traces of albumin

Before death, pulse, temperature and respiration in about half of the cases became higher Early in the disease the pulse was slow and irregular, later in the disease it became soft and rapid In 64 per cent of the cases there was a remission, with a drop in pulse and temperature, but this was apparently not a sign of improvement Also, a patient, who may have been comatose, may brighten up and answer questions from twenty-four to thirty-six hours before death Forty-two per cent of the cases showed terminal bronchial pneumonia

In no case in this series was there recovery The treatment tried was sodium benzoate in large doses, and inunctions of mercury Hexamethylenamin was used in large doses, but even with these large doses there was never a trace of formaldehyd found in the spinal fluid This seems again to disprove the value of this drug in cerebrospinal inflammations

CEREBROSPINAL MENINGITIS

The treatment of meningococcus meningitis was thoroughly considered in THE JOURNAL, April 3, 1915, p 1158, and again on page 217 of "Prevention and Treatment of Infections"

The value of the Flexner serum continues to be shown, but it is not generally recognized that it often has curative value, even after the child has been sick with this disease for days and even weeks Smith[1] reports five cases all cured by meningococcus antitoxin, and four of these patients had been sick four days, nine days, twenty days and twenty-three days, respectively These five patients not only were cured, but they recovered without sequelae The history of these patients and the results show the value of repeated injections of the serum, and also the value of withdrawing the cerebrospinal fluid at frequent intervals, even after the fluid has become clear and there are no organisms to be found either microscopically or by culture

All nervous symptoms in these cases were ameliorated after lumbar puncture The fact that as much as 80 c c of fluid was withdrawn at once shows that normal absorption of fluid is interfered with, and that the removal of the surplus fluid is life-saving

Smith's finding bears out the clinical fact recognized before the discovery of the meningococcic serum that repeated spinal punctures and drainage in cerebrospinal meningitis frequently save life

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES"

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL

W A PUCKNER, SECRETARY

OUABAIN, CRYSTALLIZED (See N N R, 1915, p 103) —*The following non-proprietary preparation has been accepted*

G Strophanthin (Thoms) Merck—Manufactured by E Merck Darmstadt Germany (Merck and Co New York)

MERCURY BINIODIDE OIL SOLUTION IN AMPULES, H W & Co—One Cc of solution contains red mercuric iodide in a neutral fatty oil, 0 1 Gm. (1/6 grain) Each ampule contains more than 1 Cc

(Accepted for inclusion in the appendix to New and Nonofficial Remedies)

Prepared by Hynson, Westcott & Co Baltimore

MERCUROL (See N N R, 1915, p 197) —The following dosage forms have been accepted

Mercurol Tablets ¼ gr—Each tablet contains mercurol 0 016 gm (¼ grain) Prepared by Parke, Davis & Co, Detroit.

Mercurol Tablets ½ gr—Each tablet contains mercurol 0 03 gm (½ grain) Prepared by Parke, Davis & Co Detroit

Mercurol Tablets 1 gr—Each tablet contains mercurol 0 065 gm (1 grain) Prepared by Parke Davis & Co, Detroit

Mercurol Tablets 2 grs—Each tablet contains mercurol 0 13 gm (2 grains) Prepared by Parke Davis & Co Detroit

Mercurol with Potassium Iodide Tablets—Each tablet contains mercurol ¼ grain and potassium iodide 1 grain Prepared by Parke, Davis & Co Detroit

IODALBIN (See N N R., 1915, p 157) —The following dosage form has been accepted

Iodalbin and Mercurol Tablets—Each tablet contains iodalbin 5 grains and mercurol 1 grain. Prepared by Parke, Davis & Co Detroit

LIQUID PETROLATUM — Petrolatum Liquidum—Liquid petrolatum is described in the U S Pharmacopeia For description see the Pharmacopeia or Useful Drugs

Non-Proprietary Preparation

Liquid Petrolatum Merck —Liquid petrolatum made from American petroleum It is colorless, nonfluorescent practically odorless and tasteless. Specific gravity 0 855 at 15 C or 0 846 at 25 C. It complies with the tests of the U S Pharmacopeia (8th ed)

Merck & Co New York

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[1] Smith W A. Cases of Epidemic Cerebrospinal Meningitis Treated with Flexner s Antimeningitis Serum Am. Jour Dis Child May, 1915, p 418.

THE JOURNAL OF THE
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SATURDAY, DECEMBER 25, 1915

On account of the large amount of space occupied by the Index in this issue of The Journal, certain departments have been omitted entirely and others abbreviated

THE INDEX AND HOW TO USE IT

This number of The Journal contains the index to Volume LXV, July-December, 1915 If this were all the index contained, comment would be unnecessary It is not, however, simply an index to the matter printed in The Journal, but covers also the articles that have appeared in the principal medical journals of the world—seventy-nine domestic and eighty-one foreign It is a practical everyday working index to current medical literature, cross indexed by subjects, authors, etc The preparation and issuing of such an inclusive index is a rather large undertaking Those who have any idea of what this work means will appreciate this the more when it is realized that the index in this issue occupies 320 columns Sometimes a doubt arises whether the index is fully appreciated by those who have occasion to look up bibliographic references So many letters are received requesting The Journal to supply references to literature when the writer has the index at hand, that it is feared sometimes that readers do not fully realize its value

To facilitate the use of the index it has been the custom to make a separate publication under the title, "Guide to Current Medical Literature" This includes, in addition to the index as it appears in this issue, the titles of articles arranged chronologically and by journals as they appear weekly in the Current Medical Literature department of The Journal[1]

The loan feature by which our readers, for the sum of 6 cents in postage, may borrow certain foreign journals listed in the index is being appreciated more and more, and evidently is proving of great convenience and usefulness to physicians There looms up the possibility that The Journal will be compelled to subscribe for extra copies of some of the more important foreign journals in order to supply the demand

RECENT ADVANCES IN KNOWLEDGE OF ALLERGIC PHENOMENA

An important step in the development of our knowledge of the phenomena of immunization was the demonstration that the treatment by injection of an animal with a foreign protein, bacterial or otherwise, leads to profound changes in the body which may endanger as well as protect the life of the animal when this protein is reinjected These changes are characterized by the formation of antibodies which, while they increase the resistance of the animal against subsequent inoculations of toxins and microbes, certainly seem to render the body highly susceptible to poisoning in the instance of innocuous proteins This apparent hypersusceptibility, which we speak of as allergy or anaphylaxis, may be so marked that a second injection of the foreign protein results in severe or even fatal injury to the animal The clinical and pathologic picture of the allergic reaction suggests that the injury to the cells is due to a poisonous action, and an early explanation of anaphylactic phenomena assumes that under certain conditions toxic substances are liberated as a result of a reaction in vivo between the protein and its antibody On such a hypothesis has been developed the widely accepted theory of parenteral digestion Vaughan, using chemical methods, found that all proteins contain a similar poisonous group which can be liberated when the protein molecule is broken up Furthermore, when this toxic product is introduced into an animal, a condition quite typical of anaphylactic shock results Hence he concluded that protein sensitization is due to the development of a specific proteolytic ferment in the body which acts on the reinjected protein and liberates the toxic element This supposition that a specific protease is formed when a foreign protein is introduced into the body has been developed also by Abderhalden and his associates By the use of biologic methods, Friedemann and Friedberger were able to demonstrate that poisonous products could be obtained, for example, by treating red blood cells or bacteria with fresh unheated guinea-pig's serum (complement), and they thought that the toxic substance in anaphylaxis is formed from the antigen, and that in this process, which Friedberger assumed to be intravascular, the complement plays an active rôle The fundamental hypothesis of the theory of parenteral digestion as developed by Vaughan, Friedemann, Friedberger and others has been generally accepted, but there is still much difference of opinion as to the matrix of the toxic fraction and the mechanism by which it is formed in the body

While the principle that allergic phenomena are due to enzymatic proteolysis has been upheld, much doubt has been cast on the early assumption that the antigen furnishes the toxic product Using insoluble substances such as agar, kaolin and barium sulphate instead of bacteria and red blood corpuscles, many observers found that these substances when treated with horse serum and then with guinea-pig serum yield a poison similar to the so-called anaphylatoxin of Friedberger Such experiments strongly indicate that the toxic product is formed by the action of the complement on the horse serum absorbed by these insoluble substances Again, the observations of Jobling and Petersen, recently reviewed in these columns,[1] emphasize the importance of the proteins of the animal itself as the matrix of the poison in the allergic reaction Jobling and Petersen find that bacteria as well as agar, kaolin and chloroform, when mixed with fresh guinea-pig serum, absorb the antienzymes normally in the blood and thereby render the serum toxic They assume that poisons are formed because the nonspecific proteolytic ferments of the blood are liberated through the absorption of the antienzymes by the antigen injected, and now the blood proteins undergo digestion Does the complement enter into these proteolytic changes? The experiments of Friedberger and others indicate that there is a diminution of the complement during protein intoxication, but there is no other evidence of a convincing nature to establish the assumption that it plays an active rôle in the proteolytic process

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[1] See advertising page 2

As to the localization of the allergic mechanism, recent researches permit certain definite statements The earlier investigators, especially Friedberger, explained anaphylactic shock as entirely due to an intravascular mechanism, but later work points to the probability that cellular reactivity is of the greatest importance Pearce and Eisenbrey, using transfusion methods, and Schultz, Dale and Weil, using isolated muscle tissue of sensitized animals, have shown conclusively that the condition of hypersensitiveness is largely determined by an increased capacity for reaction on the part of the fixed cells to the specific antigen In other words, allergy is largely due to a changed reactivity of the cells, occasioned, we may assume, by an excess of specific antibodies or enzymes in the protoplasm Such a condition easily explains both the acute death in sensitized animals and also the local skin reactions that we ascribe to allergy But the experiments of Biedl and Kraus, Friedemann and others afford evidence that all the factors necessary for the production of allergic reactions may be present in the blood stream, hence, in the light of these two lines of evidence, it seems logical to conclude that both fixed cells and the blood stream are capable of furnishing the necessary agencies in the production of protein intoxication

Although there is a great mass of experimental data at hand pertaining to allergy and associated phenomena, the facts are not sufficient to warrant any very definite conclusions The injection of a foreign protein into the body really does not render the body any more sensitive than before to that protein, but increases the power of reaction whereby the substance is more easily broken up Furthermore, in this reaction changes take place of both a chemical and a biologic nature, a correlation of which is fundamental in the thorough understanding of the phenomena of anaphylaxis

The application of the knowledge of the allergic phenomena to the study of bacterial infection and immunity is difficult, for numerous factors enter into the reaction which are not present in the instance of unformed proteins Active sensitization of animals with bacterial proteins is not difficult to accomplish, however, and the treatment of bacteria in vitro with active serum results in the formation of acutely toxic products Doerr considers the bacterial cell as representing a group of antigens which, when liberated by lytic substances in the body, are free to act as unformed proteins Whether this explanation or that of Jobling and Petersen contains the solution of the problem, it still remains that whatever proteolysis takes place, toxic products may be liberated Thus in acute infectious diseases the invading bacteria stimulate the production of specific antibodies, which react with the bacteria, leading to the liberation of protein constituents of the bacterial cell On this basis the incubation time as well as the general reaction of the infectious diseases may be explained (von Pirquet) It is interesting to note that such an explanation would not be illogical in case of the acute eruptive diseases The possibility of the development of complete immunity against unformed, primarily harmless proteins seems questionable, for it has been demonstrated that animals with high antibody contents in their blood die following subsequent inoculations of the antigen But in the instance of cellular proteins, that is, microbes, a definite resistance is often developed which usually is characterized by a marked increase in the power of phagocytosis, a process the influence of which, if any, we are not able to trace in the reactions against unformed proteins

NEW FOOD GRAINS—PROSO AND KAOLIANG

We are accustomed to novelties in drugs Scarcely a week passes without the heralding of some new synthetic chemical compound, plant ingredient or animal tissue constituent to which therapeutic potency is attributed It requires not only a clear memory but also a critical judgment to cultivate a progressive and proper attitude of mind in the midst of such incessant therapeutic suggestions Far rarer are the proposed innovations in the domain of foods Now and then some unusual fruit or nut or green vegetable is brought to the attention of the public, but our "staple" crops persist unchanged in popular favor Corn, wheat, rye and potatoes each have a preferential place in dietary esteem in different localities, depending on tradition and geopraphic and economic conditions The praises of millet seed and sorghum grain as human foods have a truly novel ring, however, even in these days of possible shortage in the usual cereal food supply of some of the European countries

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[1] The Antiferments of the Blood editorial, THE JOURNAL A. M. A Oct 30 1915 p. 1554

Millet, as is well known, has been cultivated for forage and grain since ancient times To Americans the name will at once suggest a fodder for animals, and its significance is not enhanced by the familiar designation of "hog millet" Professor Nansen[1] of the South Dakota Agricultural Experiment Station, who has investigated the possible use of millet as food for man, has suggested the substitution of "proso," the ancient Slav name for the grain The seed of proso millet, although practically unknown in America as a food for human consumption, is a familiar article of diet in Russia and India It is said that during the Russian famine of 1890 proso millet bread was for a long time the only food remaining between the peasantry and starvation The grain can be milled and cooked in the same ways as are many other cereals The composition of hulled proso is much like that of patent wheat flour, being even richer in protein The grain can be used whole, ground like corn meal and thus made into palatable dishes, or used as flour The lack of gluten makes it necessary to combine proso with wheat flour if it is to be converted into a good bread A "public" test of proso as a table cereal was made at the South Dakota State College of Agriculture early in the present year, so that it has already experienced an "official introduction" From the standpoint of practical agriculture proso deserves consideration because, like kafir corn, it represents a crop which can be produced in dry seasons or in arid regions where the attempts to raise the more popular cereals are often discouraging

Another plant product tested for its possible usefulness as a human nutrient is kaoliang, a drought-resistant grain sorghum long used in Africa, India and parts of Asia[2] This plant, once a tropical annual, also can by careful selection be extended as far north as Indian corn on this continent Specimens of hardy kaoliang from China reached America as early as 1866, but were discarded because they seemed of no value for sugar making, the only use to which the sorghum plant was put at that time This sorghum seed can be milled, and when mixed with gluten-yielding flours kaoliang contributes to the production of palatable baked products as does kafir flour which has lately been exploited as a human food[3]

Variety in diet is a physiologic desideratum, and changes in our food staples occasionally become a climatic, agricultural, or economic necessity Sometimes revolutions occur in the domain of popular nutrition The potato was introduced in this way We must at least be equipped with detailed information of the increasing dietary and culinary possibilities in this field

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THE EFFECT ON THE OFFSPRING OF LEAD POISONING IN THE FATHER

In articles on industrial lead poisoning, it is usual to find the statement that this form of intoxication results in fetal death and in death of offspring soon after birth, not only when the mother is the victim of the poisoning, but also when the mother is normal but the father "leaded" As far as maternal lead poisoning is concerned, there seems to be abundant evidence that women who work in lead are far more likely to abort than are women in ordinary factory work Legge[1] abstracted from the reports of British factory inspectors for the year 1897 the following statistics concerning women lead workers Of 77 married women, 15 were sterile, among the 62 who became pregnant, 15 never bore a living child The stillbirths numbered 21, the miscarriages 90, 101 living children were born but 40 of them died, leaving 61 living children as the result of 212 pregnancies Another striking report comes also from the British factory inspection service Oliver[2] quotes Reid's figures as follows For 100 mothers engaged in housework, there were 43 2 miscarriages and stillbirths, for 100 mothers engaged in mill work, not lead, 47 6, for 100 mothers, in lead work before marriage, 86 0, for 100 mothers, in lead work after marriage, 133 5 Tardieu[3] reported to the French government in 1905 that 608 out of 1,000 pregnancies in lead workers resulted in abortion Animal experiments also, carried on by Oliver, by Gilbert, and by Legge and Goadby, show that death of the fetus may be produced by poisoning the mother with lead

In those countries in which many women are employed in the lead industries, these facts are of great importance and have resulted in laws forbidding the employment of female labor in certain processes In the United States, few women employees are exposed to lead poisoning, and we are more vitally interested in the question whether or not paternal plumbism has any effect on the germ The conscientious seeker after evidence will find far less to support the theory of paternal influence than of maternal, indeed, he will wonder at the positiveness on this subject shown by many textbooks on industrial diseases There is the report of Chyzer[4] which is often quoted, concerning degeneracy among the children of Hungarian potters But pottery dipping is a house industry in the Hungarian villages, and there is ample opportunity both for maternal poisoning and for poisoning of the children after birth A few statistics are furnished us from France Rudeaux[5] in 1905 stated that out of 442 pregnancies in women married to lead workers, 66 ended in abortion and 241 in premature birth The most often quoted report on this subject is Constantin Paul's,[6] written in 1860 Lewin[7] seems to have borrowed it in 1904 and republished Paul's figures without quotation marks, and as German medical literature is read more than French in this country, the figures are almost always attributed to Lewin They are as follows Seven wives of lead workers who had given evidence of plumbism had 32 pregnancies, of which 11 ended in abortion, and 1 in stillbirth Of the 20 children born living, 8 died in the first year, 4 in the second, 5 in the third and 1 after the third, leaving only 2 alive out of the 32 pregnancies

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[1] Nansen, N E Proso and Kaoliang as Table Foods, South Dakota Agric Expt. Sta Bull No 158, March, 1915

[2] Ball, C R The Importance and Improvement of Grain Sorghums, U S Dept Agric, Bureau Plant Industry Bull 203, Washington, 1911

[3] See U S Dept Agric Farmers' Bull 559, 1913

[1] Legge Jour Hyg, 1901, i, 96

[2] Oliver Brit Med Jour, 1911, i 1906

[3] Tardieu Poisons industrielles, Paris 1905

[4] Chyzer Chir Presse, Budapest, 1908, xliv, 906

This is, after all, slender evidence on which to base positive statements on so important a matter as the effect of paternal lead poisoning on the germ, and we are grateful for two experimental studies in this field which have just been published independently Cole and Bachhuber,[8] working at the Wisconsin Agricultural Station, fed lead acetate to rabbits and fowls Experiments with rabbits resulted in a mortality of young during the first four days after birth of 47 7 per cent for offspring of leaded males as contrasted with 29 2 for the offspring of normal males The average weight at birth was 49 8 grams for the former, 59 0 grams for the latter With Leghorn hens the results were similar When the hen was bred to a cock which had been fed lead acetate, 27 5 per cent of the embryos in fertile eggs died and 14 1 per cent of the chicks born alive died in less than three weeks, while the corresponding figures were only 17 2 per cent and 3 7 per cent when the cock was normal

C V Weller[9] of the University of Michigan used commercial white lead — basic carbonate — and fed it in capsules to guinea-pigs The experiments which interest us especially are those with leaded males, and these are some typical results which he obtained

	Free Female Mated with	
	Free Male	Lead Male
Number of offspring	58	65
Average birth weight, grams	81.5	66.3
Number stillborn	3	3
Died first week	2	9

The effect of alternate matings of the same normal female with a normal and with a lead male is also interesting For instance, the birth weights of the offspring of a free male were 79 gm in two instances, and of a lead male 54, 47 and 40 gm

The results of paternal lead poisoning in guinea-pigs are shown, not in sterility or in stillbirth, but in reduction of weight at birth, and this underweight persists through life Next to this the most striking change is the high rate of mortality during the first few days after birth Nine out of 65 offspring of leaded males died during the first week, but only two out of 105 offspring of control males

In a lecture on industrial plumbism delivered in London in 1911, Thomas Oliver declared that from the purely physical point of view a nation's strength is measured by its reproductive powers and the high percentage of fitness of its children He then went on to point out the danger to the race of industrial plumbism, especially as it affected potential mothers In our country this danger is largely confined to men, but that it is a serious evil in our lead trades has been shown by numerous state and federal investigations If we are to believe that this results in impairing the efficiency not only of this but also of the coming generation, it would make a strong argument for the legal regulation of the lead trades

PUTREFACTION PHENOLS AND PROTECTIVE MECHANISMS IN THE BODY

It has long been known that when urines are distilled with a mineral acid, phenols may be recovered in the distillate This result is obtained not only when phenol (carbolic acid) itself is absorbed through some channel into the circulation, but also under ordinary conditions of diet and health in which the antiseptic has never been employed Baumann showed that in the urine itself the phenols are present in the form of ethereal compounds Among these are the organic or "conjugated" sulphates and the glycuronic esters of the phenols The fact that in "carbolic acid urines" the phenol occurs in the form of an ethereal sulphate early became a classic example of the detoxicating power of the animal organism This was comparable with the protective reaction by which indol derivatives were found to be excreted as ethereal sulphates, particularly in the form of the clinically familiar indican of the urine

At first it was believed that the phenol derivatives in the urine owe their origin to plant products in the food for the urine of herbivora was observed to be particularly rich in its yield of the phenols The progress in the study of the chemistry of putrefaction presently developed a new interpretation In man the elimination of phenol was seen to be increased by a diet rich in proteins The latter yield tyrosin, which can be converted into phenol and cresol by putrefactive changes Here, then, was the key to the sequence of events Proteins, tyrosin, intestinal putrefactive changes with production of phenols and their alimentary absorption, condensation to phenol esters, and excretion in the urine — these were the steps Like indican, which owes its origin to the tryptophan complex of the proteins, the phenols likewise became an index, so to speak, of putrefactive conditions in the bowel By vigorous catharsis phenols are made to disappear from the excretions, whereas in severe constipation or intestinal obstruction they are reported to be increased in amount

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[5] Rudeaux quoted by Thompson The Occupational Diseases New York 1914 p 257

[6] Paul Constantin Arch gen. de med., 1860 i 513

[7] Lewin Berl. klin Wchnschr 1904 xli 1074

[8] Cole and Bachhuber Proc. Soc. Exper Biol and Med. 1914 xii 24

[9] Weller C V Jour Med Research 1915 xxxiii 271

In the light of all this interesting information it seemed at first to be merely a question of expediency as to which of the various excretory products of putrefaction should be measured to furnish a helpful clinical guide to intestinal conditions The indican tests, being easily applied, were earliest in use and still enjoy a widespread popularity When they are "checked up" by estimations of the ethereal sulphate in the urine it is frequently found that there is a lack of correspondence between the two Either other substances than indol compounds are eliminated as conjugated sulphates, or the indican precursor may find its way into the urine in a form other than sulphate Both circumstances are known to occur The phenols may add to the content of "ethereal" sulphate, and the indol derivatives may leave the body as glycuronates And when it comes to a practical application of the urinary content of either phenols, indican or ethereal sulphates to the question of the extent of the putrefactive conditions in the bowel, experience has shown that the diet as well as the bacterial invaders plays a dominant part If the food is deficient in protein precursors of these peculiar excretory products the latter are necessarily reduced in amount Without a suitable pabulum the putrefactive micro-organisms cannot manifest their characteristic reactions

In all of this development of our knowledge of the interrelations between putrefactive products and urinary derivatives, it has for the most part been tacitly assumed that the conversion of the harmful into the more harmless product is ordinarily quite complete Certain it is that the ethereal sulphates of the urine are decidedly increased after the deleterious compounds have been introduced into the organism Considerable interest will be awakened, therefore, by the recent communication of Folin and Denis[1] demonstrating that the phenols are by no means quantitatively converted into conjugated phenols in the body This fact has been established by the use of an improved method of analysis[2] The free phenols, of which the most important quantitatively is doubtless paracresol, represent from 30 to 90 per cent of the total output In addition to this unexpected finding, the excretion of total phenol products in the urine appears to be much greater than is indicated by the phenol figures heretofore recorded in the literature The new data furnished by Folin and Denis indicate 0 3 to 0 5 gram of "total phenols" in a twenty-four-hour quantity of human urine Normal human subjects (as well as larger animals) yield comparable figures, and those furnished by infants and children are proportionate In some children there is little or absolutely no conjugation, the whole of the phenols being excreted in the free form As the Boston investigators remark, this is unexpected when considered from the prevailing concept of the protective mechanism by means of which the phenols are supposed to be detoxicated through transformation into conjugated compounds The phenol excretion tends on the whole to be much higher on protein-rich diets and lower on a regimen containing smaller amounts of protein

The possible bearing of these newer discoveries on current conceptions of the pathology of nutrition is intimated by Folin and Denis In general, they state, biologists are inclined to assume that the protective processes are adequate — that certain poisonous or deleterious substances are easily converted into harmless compounds, while the clinicians are constantly considering established or possible deficiencies and generally believe in "auto-intoxications" as an important feature in the etiology of diseases The inadequacy of some of these supposedly perfect protective mechanisms hitherto championed by the physiologists has been brought to light in the case of the phenols

THE LIVER AND FAT METABOLISM

A considerable number of diseases either border on or are actually classified as attended with an infiltration of fat in some of the organs The abnormal states of the body in which an infiltration of the liver, for example, has been observed include such diverse and unlike cases as diabetes, poisoning with phosphorus, phlorizin, chloroform or alcohol, emaciation, pernicious diarrhea, etc A symptom which is common to such a variety of pathologic conditions cannot well represent the fundamental etiologic factor in each instance, on the contrary, it is far more likely that the common feature is the outcome of, or is conditioned by, some primary disturbing agency As one of the authorities in this field says, the common factor of the above-named pathologic conditions "is undoubtedly a disturbed or deficient metabolism either of protein or of carbohydrate" In all these cases the fat reserves must be mobilized to supply material for the energy changes ordinarily furnished by the other foodstuffs

Why the liver should be singled out so conspicuously for this "mobilization" of fat has long remained obscure More recent comparisons of the fats ordinarily present in the hepatic tissue with those found in the usual fat-storage localities of the adipose tissue have furnished the clue to a possible explanation The fat from the fat depots like the subcutaneous tissue, the omentum, mesentery, and adipose tissue about the kidney consists essentially of the glycerids of fatty acids, such as palmitic, stearic and oleic acids Of these the oleic acid is an "unsaturated" organic compound Without elaborating the chemical details it may suffice to say that the content of unsaturated fatty acids in any fat is indicated by the amount of iodin it can absorb The "iodin values" of the fats therefore have a useful significance in this respect It appears that under ordinary circumstances the fats of the liver, heart and kidney have much higher iodin values than the fats which are deposited in the fat depots of the body and are derived directly from the food fat as well as by synthesis from other absorbed nutrients

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[1] Folin, O, and Denis, W The Excretion of Free and Conjugated Phenols and Phenol Derivatives, Jour Biol Chem, 1915 xxii 309

[2] Folin, O, and Denis, W A Colorimetric Method for the Determination of Phenols (and Phenol Derivatives) in Urine, Jour Biol Chem, 1915, xxii, 305

The unsaturated fatty acids are apparently more readily oxidizable than the normal compounds Leathes[1] has expressed the view that the liver exercises the function of "desaturating" fats brought to it so that they are prepared for the subsequent metabolic processes "It looks," he fancifully remarks, "as if the work of the liver consisted in an operation which may be compared to the drying of gunpowder The fats we take in our food are remarkably unreactive substances, and it has always been one of the most astonishing chemical achievements of animal cells that they should be able to burn up completely and cleanly as they do so stable a structure as saturated fatty acids like palmitic or stearic acids They are wet gunpowder And the body stores its gunpowder wet, and safely removed from the inflammatory operations of busily working cells When the orders for mobilization are issued this wet powder is conveyed to the drying chambers in the liver, and from there distributed to the fighting line in a proper condition for use There are times when the stress of this work is manifestly too great Too active a mobilization of stored fat, or too little activity in dealing with it on the part of the liver, will result in an accumulation of the unfinished product in that organ A fatty liver is then the result, and the fatty acids which it contains are found to have a low iodin value There is an accumulation of wet powder"

In harmony with the foregoing, Mottram[2] has recently pointed out that, in the case of infiltration, the fat is in the liver for physiologic, not pathologic, reasons When there is need for fat for energy transformations, particularly when the other foodstuffs such as sugar are not available for nutritive purposes, the liver is found to be infiltrated with fats, presumably in order to be chemically transformed in some degree before they are handed on for use elsewhere It is interesting to recall that absorbed food fat is not carried directly to the liver as the other digestion products are, but it enters the circulation directly by way of the thoracic duct and thus avoids the hepatic cells before it is carried to the storage places for fat Mottram suggests that when energy is wanted by the body in a nutritive emergency as the result of some pathologic condition, it might be advantageous to save the liver the work of desaturation by feeding fats containing a high percentage of unsaturated fatty acids These are found in some of the fish oils like cod liver oil, and in such food products as sardines and herring Opie and Alford[3] have noted that ordinary fat is not an advisable food in conditions like chloroform poisoning, in which infiltration ordinarily occurs in notable degree

The view which presents infiltration of the liver as a physiologic response rather than a pathologic consequence is supported in an indirect way by the usual absence of degenerative histologic features in this organ It explains the fatty infiltration of the liver observed during late pregnancy and early lactation[4] Evidently the fetus is greedy for unsaturated fats, which are worked up for its benefit by the liver

It is generally accepted that acidosis, in the sense of ketonuria, is related in the body to the fats as its antecedent Ketonuria occurs under the same conditions that manifest fatty infiltrations of the liver When the isolated liver is perfused with fatty acids the acetone substances may arise Mottram[2] postulates that just as the infiltration is an expression of a physiologic function (desaturation) in fat metabolism, acidosis leading to ketonuria is the result of the fatty acid pursuing an abnormal path of metabolism, possibly as a result of overwork of the liver Either condition is relieved when carbohydrate is available Whether the usefulness of unsaturated oils is likewise indicated, as has been suggested, remains to be ascertained

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Current Comment

THE BILE AND CHOLESTEROL EXCRETION

There appears to be little doubt at present that cholesterol (or, as it is sometimes designated, cholesterin) can be absorbed in the alimentary tract from such food intake as may contain it This has been ascertained in particular from the fact that after suitable feeding of foods rich in cholesterol, the content of this substance in the blood may be increased Cholesterol is found, among various tissues and fluids of the organism, in the bile The origin of the biliary cholesterol, which betrays itself in a familiar pathologic way in the formation of gallstones, is by no means certain as yet It may be derived from disintegrating red blood cells, or it may represent food cholesterol that is being eliminated in the only excretory fluid that contains a suitable solvent for it Whether the bile presents a normal or physiologic mode of excretion for cholesterol has been much debated In so far as the evidence on this subject is derived from an examination of bladder or fistula bile, it must be remembered that the cholesterol thus found may have its origin in the walls of the biliary passages Naunyn always defended the view that this is the case Inasmuch as bile from the gallbladder is much richer in cholesterol than that from a fistula it was contended that this substance is added to the bile largely by the epithelium of the bladder The evidence is, however, by no means conclusive A number of feeding experiments have been undertaken by various investigators at different times to ascertain whether an abundance of cholesterol in the diet would be attended with an increase of the substance in the bile The results, from which it was hoped to learn whether absorbed cholesterol would be excreted again in the bile, have been rather conflicting or indecisive In the newest experiments conducted by D'Amato[1] at the University Medical Clinic in Naples, on dogs with biliary fistulas, it appears that a diet rich in food containing cholesterol does increase the content of cholesterol in the bile But the increment is so slight and insignificant in comparison with the quantity of cholesterol fed that there is no real justification for the contention that the bile forms a prominent mode of excretion for the substance under discussion Furthermore, there is no convincing evidence that cholesterol is converted, as some have assumed,[2] into cholic acid, which enters so largely into the make-up of the bile salts

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[1] Leathes J B The Functions of the Liver in Relation to the Metabolism of Fats, Harvey Lectures for 1908 1909, p 213

[2] Mottram V H Fat Metabolism and Its Relation to Acidosis Canadian Med Assn Jour July, 1915

[3] Opie and Alford Jour Exper Med 1915 xxi 21

[4] Cf Coope R and Mottram V H Fatty Acid Metabolism in the Liver Jour Physiol 1914 xlix 23 1915 xlix 157

OSTEITIS DEFORMANS

Any disease which can claim a record of scarcely more than 200 authenticated cases in the modern literature of clinical medicine surely deserves to be classed among the rarer maladies This situation applies to osteitis deformans, which Sir James Paget, who described it in 1876, termed a "rare disease of bones" Although in its advanced stages it presents an unmistakable clinical appearance, there have been comparatively few scientific investigations of osteitis deformans Heredity, syphilis and other bacterial infections have at times been regarded as predisposing causes, but there is little to justify this belief in the light of more critical analysis of the case reports and laboratory findings Neurotrophic factors have seemed to some students of the disease to be more likely causes of the bone dystrophy, perhaps because so little that is definite can be postulated in relation to the association of bone defects and nervous disorder An opportunity to make a study of new cases of osteitis deformans has arisen at the Jefferson Hospital in Philadelphia The unusual feature of the investigation there[3] is the detailed examination of the metabolism in two cases, one advanced and the other early In the advanced case there was a pronounced retention of calcium, magnesium and phosphorus This metabolic picture is thus to a certain degree the reverse of that seen in osteomalacia In the latter disease, the skeletal structures of the organism have been depleted through the resorption of both organic and inorganic substances Inasmuch as calcium is the principal element concerned in bone growth, the significance of the observed high retention of this element in osteitis deformans may be related to the abnormal development of certain portions of the skeleton It must be stated frankly, however, that some students of the disease assert that the increased development of the bone or bonelike structure is not accompanied by the calcification of these parts, though the few available analyses tend to support the evidence of positive calcification The association of acromegaly and gigantism with disease of the pituitary gland, and likewise the osseous lesions of cretinism in which the thyroid is unquestionably concerned, have justified the Philadelphia investigators in a hypothesis in regard to osteitis deformans They recall that the interrelation of disorders of the bone metabolism and perverted function of some of the ductless glands has been verified in certain cases This fact, together with other observed features of abnormal calcium metabolism, leads them to the belief that Paget's disease also is a disorder of bone metabolism probably dependent on the absence or perversion of some internal secretion Every available opportunity in the future ought to be utilized to consider the etiology of osteitis deformans critically in the light of the suggestions here recorded

THE KIDNEYS AS A FACTOR OF SAFETY

"For a score of years, or more, in many of us the kidney is gradually losing some of its valuable material from one cause or another without any symptom, without a reminder sufficient to spoil our pleasure of life or to hamper our activities Not until that luxurious surplus is approaching its exhaustion do we get a warning But then our work is mostly done and our time limit nearly reached" This quotation, from a lecture by Meltzer[1] on the factors of safety in animal structure and economy, may serve to remind us not only that we are continually producing metabolic products which would be harmful if they were not promptly removed from the body, but also that our organism is doubtless absorbing substances from the varied intake of food mixtures which might be expected now and then to exhibit toxic effects, were it not for the efficiency of the excretory organs In other words, it is not at all improbable that we frequently escape the detrimental possibility of ingested products because they are excreted so promptly and completely that they cannot accumulate in sufficient concentration to do harm in the body The actual danger never reveals itself unless the eliminating organs have had their potency impaired in some way An interesting illustration has recently been furnished by Smillie,[2] who has found that a potassium salt such as the chlorid, in a dose which is harmless to normal individuals may be injurious in nephritis Inasmuch as suitable patients may react to potassium chlorid without showing adverse effects from comparable quantities of sodium chlorid, the "salt action" cannot account for the effect It may be assumed, therefore in the constant presence of the chlorin ion, that the toxicity is due to the potassium ion Smillie has found that rabbits die with great suddenness after an ingestion of 1 gm (15 grains) of potassium chlorid, if they have acquired an experimental uranium nephritis of a degree sufficient to increase the nonprotein blood nitrogen to 100 mg per hundred cubic centimeters The fatal outcome is not due to "salt action" but probably to the action of the potassium ion on the heart muscle Comparable acute poisoning was also observed in human nephritis This acute intoxication occurs probably because the salt, which normally is readily absorbed and very rapidly excreted, in nephritis is readily absorbed but not excreted, thus reaching a concentration in the blood which is injurious Such a demonstration is highly significant in its relation to the management of diet in nephritis Some of our foods, notably the vegetables, are particularly rich in potassium Smillie refers to a calculation indicating that a man who took a large part of his food in the form of potatoes might have an intake of ten times the fatal dose, calculated on the basis of experience on animals with kidneys removed Bunge has actually reported taking more than half an ounce of potassium salts in a day Were it not, says Smillie for the fact that potassium salts are so rapidly excreted by the kidneys in health, the effects might be very serious

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[1] D'Amato, L. Uebt das in der Nahrung enthaltene Cholesterin einen *Einfluss auf die Cholesterinausscheidung in der Galle aus?* Biochem Ztschr, 1915, lxix, 217

[2] Compare Grigaut Le cycle de la cholesterinemie, Paris, 1913

[3] Da Costa, J C., Funk, E. H., Bergeim, Olaf, and Hawk P B Osteitis Deformans *A Report of Five Cases with Complete Metabolism Studies in Two* Instances and a Review *of the* Literature, Jefferson Medical College and Hospital Publications, 1915, vi, 1

[1] Meltzer, S J The Factors of Safety in Animal Structure and Animal Economy the Harvey Lectures, 1906-1907, p 139

COOPERATION IN INDUSTRIAL HEALTH INSURANCE LEGISLATION

At the request of the American Association for Labor Legislation, the Council on Health and Public Instruction of the American Medical Association has appointed a committee to assist in drafting a health insurance bill to be introduced into the legislatures in session in 1916 The committee consists of Dr Alexander Lambert of New York, chairman, Dr Henry B Favill of Chicago, and Dr Frederic J Cotton of Boston The preparation of this bill and the plans for its immediate introduction into several legislatures have removed health insurance from the realm of academic discussion and have placed it in the front rank of the pressing practical questions confronting the medical profession The Association for Labor Legislation, which is responsible for this bill, has been influential in securing the enactment of workmen's compensation laws in thirty-three states within five years It has also worked for protection against industrial disease, and drafted the federal law abolishing the use of poisonous phosphorus in matches In its legislative program it has been backed by progressive employers, by representative labor leaders and by members of the medical profession interested in industrial diseases Every extension of its activities in the field of industrial hygiene has made increasingly clear the absolute necessity for making systematic provision for sickness of working men, which is possible only through a comprehensive system of health insurance In preparing its bill, which is the next step in health legislation the association wisely has recognized that adequate medical care is of the first importance, both to the wage earner and to his family, and it has been equally wise in asking the cooperation of medical men in drafting those provisions which affect physicians The certainty that such laws will be enacted within a few years, the success of the American Association for Labor Legislation in obtaining the legislation it advocates, and the consideration shown to the medical profession have convinced the Council on Health and Public Instruction that cooperation is desirable and opportune This close cooperation will guarantee that the best interests of the medical profession under health insurance will be borne in mind at every step

THE INCORPORATION OF THE AMERICAN MEDICAL ASSOCIATION

On last Monday, December 20 the Supreme Court of Illinois rendered a ruling — it was not a decision as the newspapers stated, but simply a ruling — in the case of *Lydston vs the State's Attorney* The newspapers, in sweeping statements — inspired? — have carried the impression that the ruling is against the American Medical Association, that the officers, including trustees, are holding their offices illegally, that a new election must be held immediately, etc Nothing could be farther from the truth It is the old story, it is merely another step in the case started about the time of the meeting of the American Medical Association in St Louis in 1910, at which time Lydston tried to compel the state's attorney to bring quo warranto proceedings against the Association The American Medical Association has not yet technically been brought into the case, thus far the issue has been between Lydston and the state's attorney The technical announcement of the ruling just made is "*Hoyne, State's Attorney,* vs *People ex rel,* Lydston, petition certiorari denied" The state's attorney tried to get a decision from the Supreme Court, but the Supreme Court declined to hear the case at this time and therefore denied the writ of certiorari

Foreign Technic—In technic the general observation is made that the foreign operator does much more of his own work than is the rule with us He assists himself notably He often ties, cuts and sponges himself Yet he obtains no small speed His assistants are usually far better trained than ours because they work longer with him Man or nurse, the same individual has learned to know, by years of association just what the next need or move of the surgeon is to be, and the assistant, even when changed as in Britain, does not stay less than six months, and is a senior on salary The operator may even thread his own needles and lay out his own simplified outfit Lessened infection is said to result from a minimum number of persons in contact with instruments sponges and wound—Robert L Dickinson

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[2] Smillie, W G Potassium Poisoning in Nephritis, Arch. Int. Med August 1915 p. 330.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education, public health, etc)

CALIFORNIA

Municipal Clinic—A municipal clinic for the treatment of tuberculosis in Sacramento is practically assured A site has been secured at Second and Q Streets, and the clinic will be opened early in the year

Physician Wins Malpractice Suit—In Judge Woods' court, November 12, a jury rendered judgment in favor of Dr James C Negley, Los Angeles, in the suit for $30,000 brought against him by Agatha Wells for alleged malpractice

Hewlett to Succeed Wilbur—Dr Albion Walter Hewlett, formerly professor of internal medicine at the University of Michigan, Ann Arbor, was appointed, December 8, to succeed Dr Ray Lyman Wilbur, president-elect of the University of California, as professor of medicine at Stanford University

Hookworm—The California State Board of Health will establish headquarters in Los Angeles for the study of hookworm disease which is said to afflict many of the miners in Southern California The malarial belt of the Sacramento Valley will also be studied Dr James G Cumming, formerly head of the Pasteur laboratory at the University of Michigan, Ann Arbor, has been appointed head of the laboratories in Los Angeles

Head of Tuberculosis Bureau—Miss Edythe L M Tate, executive secretary of the California Association for the Prevention of Tuberculosis, has won first place in a competitive examination held by the California Civil Service Commission for a position as director of the Tuberculosis Bureau of the State Board of Health, which carries with it a salary of $3,000 Miss Tate was largely instrumental in securing the passage of the law appropriating $75,000 to the Tuberculosis Bureau

Personal.—Dr Frederick Parker Gay, professor of pathology in the University of California, Berkeley, has been selected as faculty research lecturer for 1916 and will give the annual public address on the result of his own research in some special field at the University of California, March 23, 1916 Dr Gay's selection was in recognition of his recent work in developing improved methods for the treatment of pneumonia and typhoid fever——Dr Norman Bridge, president of Throop Institute, Los Angeles, was the guest of honor at a dinner given by the Chicago members of the Alumni of Lake Forest College and representatives of the faculty of that institution at the University Club, Chicago, December 9——Lillian J Martin, professor of psychology at Stanford University, has been appointed head of the department of psychology, succeeding Dr Frank Angel, who has resigned to take charge of the Belgian relief work in London and who sailed for the war zone, December 10——Dr Charles C Landis, Chico, will leave for China next month He will be located in the province of Hunan as a missionary of the Adventist Church——Dr Thomas A. Stoddard, Santa Barbara, has returned after several months' work in a British base orthopedic hospital, Liverpool——Dr Percy T Phillips, Santa Cruz, has been appointed a member of the State Board of Medical Examiners, succeeding Dr Frederick F Gundrum, Sacramento, who resigned to accept appointment as a member of the State Board of Health——Dr Ray Lyman Wilbur, dean of the medical department of Stanford University, San Francisco, will assume office as president of the Leland Stanford Jr University, January 1——Dr Josiah Morris Slemons, of the faculty of the University of California, has resigned to accept a similar position in Yale Medical School

DISTRICT OF COLUMBIA

Diphtheria—For the first ten months of 1915 there were 191 cases of diphtheria in Washington, with eleven deaths During the same period of 1914, 100 cases were recorded

Mental Hygienists Meet.—At the first meeting of the board of directors of the Society for Mental Hygiene of the District of Columbia, December 2, Surg-Gen Rupert Blue, U S P H S, was elected president, Mr Cuneo H Rudolph, first vice president, Dr D Percy Hickling, secretary, and Miss Nellie Sedgley, treasurer

Personal—Dr D Percy Hickling has been appointed chairman of the Public Health Committee of the Washington Board of Trade——Dr Edgar D Thompson has been selected as president of the North Capitol and Echington Citizens' Association——Dr Philip Newton is reported to have been made corps surgeon in the Russian service

District Society Election—At the annual meeting of the Medical Society of the District of Columbia, December 1, the following officers were elected president, Dr Edward Y Davidson, vice presidents, Drs Joseph D Rogers and Isaac S Stone, recording secretary, Dr Henry C MacAtee, corresponding secretary, Dr Arthur L Hunt, and treasurer, Dr Charles W Franzoni, all of Washington

Medal of Honor to Major Heller—A bill has been introduced into the senate to authorize the secretary of war to award the congressional medal of honor to Maj Joseph M Heller, M C, U S V, for unusual, distinguished and gallant action in attending the wounded under fire while a contract surgeon, U S Army, at the battle of Naguilan, North Luzon, Philippine Islands, Dec 17, 1899, and during the months of September, October, November and December of the same year while attached to the first battalion, Twenty-Fourth United States Infantry, First Division, Eighth Army Corps, under the command of Maj Gen H W Lawton, U S V

FLORIDA

Personal—Dr Grace Whitford, Ozona, has been appointed acting chairman of the health department of the Florida Federation——Dr Theodore G Croft has been appointed city physician of Jacksonville

New Officers—Duval County Medical Society at Jacksonville, December 7 president, Dr James H Pittman, vice president, Dr W Williams McDonell, and secretary-treasurer, Dr Herbert O Black, all of Jacksonville——Hillsboro County Medical Society at Tampa, December 7 president, Dr Louis S Oppenheimer, Tampa, vice president, Dr John W Alsobrook, Plant City, secretary, Dr Earle H McRae, Tampa, and treasurer, Dr William C Douglass, Tampa——Pinellas County Medical Association at Clearwater, November 11 president, Dr Franklin W Wilcox, vice president, Dr Alvin J Wood, secretary-treasurer, Dr William McK Davis, all of St Petersburg

GEORGIA

Personal.—Dr Howard J Williams has retired after twenty years' service as a member and president of the Macon Board of Health At the last meeting which Dr Williams attended, he was presented with a loving cup by members of the board—Dr Alfred F White, Flovilla, has been appointed a member of the State Board of Medical Examiners, to succeed himself——Dr Olin H Weaver has been appointed chairman of the Macon Board of Health

ILLINOIS

Personal.—Dr William E Range, Glen Carbon, has been obliged to go to the Southwest on account of the health of his wife——Dr and Mrs J L Huntington, Princeton, have decided to locate in Santa Barbara, Calif

Quarantine Lifted—Three counties of Illinois have been freed from quarantine for the foot and mouth disease and the quarantine in six other counties has been modified by an order from the Department of Agriculture, effective December 18 This order releases from quarantine the counties of Dupage, Livingston, Marshall and all of Cook County, excepting the Union Stock Yards, which remains a restricted area for handling animals for immediate slaughter

Chicago

Inspecting the Children—The health commissioner suggests that to supplement the efforts to improve the public health by inspection of the schoolchildren, the thousands of children gathered in the Sunday schools, particularly during the holiday season, should likewise be inspected He suggests that the pastors of the churches throughout the city and the superintendents of Sunday schools invite local physicians to look over the Sunday school classes on Sunday mornings or afternoons to determine whether any of them suffer from communicable diseases He believes that physicians would be glad to render this service without pay

Memorial Service for Dr Black—A memorial service for the late Dr Green Vardiman Black, dean of the Northwestern University Dental School, who died August 31, was held in the Hotel LaSalle, December 11, by the Chicago Dental Society Addresses were made by President Harris of Northwestern University, who spoke of Dr Black as the dean of the dental department of that institution, Dr Fred B Noyes, who paid tribute to the student, investigator and inventor, Dr C. N Johnson, who spoke on 'The Teacher and Writer", and Dr Thomas L. Gilmer, the subject of whose address was "The Man and Friend"

INDIANA

Trachoma.—Fifty cases of trachoma have been found in Indianapolis, some of the cases among schoolchildren

Personal.—Dr Clarence H Mead, health commissioner of Bluffton, is ill with diphtheria.——Dr Andrew J Gray Young America, is reported to be seriously ill as the result of a cerebral hemorrhage——Dr T Roy Cook, Bloomfield, who has been ill with general neuritis, is reported to be improving

Physicians Running Drug Stores—In one of the justice's courts in Indianapolis a physician was convicted of running a drug store without a license, because he had filled the prescriptions of another physician This case was appealed from the justice's court to the county criminal court where the verdict was upheld

Measles—Under date of December 18 it was said there were 140 cases of measles in Indiana Harbor A meeting of the health board with school physicians and inspectors was held to consider the epidemic A circular was prepared by the health department giving instructions to the heads of families with regard to the prevention of the spread of the disease.

MONTANA

Personal.—Dr Clem C. Seerley Manhattan is taking postgraduate work in New York City——Dr Alfred N Smith, Glasgow, has been appointed physician of Valley County——Dr Daniel J Donohue Glendive, has moved to Butte

New Society Organized.—The organization of the Southeast Montana Medical Society was perfected at Miles City December 3 Dr Wimon W Andrus, Miles City was elected president, Dr Virgil P Garst, Terry, vice president, Dr John G Randall, Missoula, secretary, and Dr Sadie B Lindeberg, treasurer, Miles City

NEW YORK

Emergency Health Expenditures.—The attorney-general in an opinion rendered to the health officer of the port of New York says that he may, with the approval of the governor not only expend the fees collected by him, but may employ any additional measures he deems necessary It is stated in section 37 of the state finance law that the health officer must turn into the state treasury by the fifth of each month the fees received by him This gives him in cases of immediate danger the power to use them in the protection of the public health

Tuberculosis Patients and the Law—The state law gives health departments power to enforce their mandates with reference to the care of tuberculous persons Many afflicted with tuberculosis are not careful to comply with the measures necessary to prevent the spread of the disease to others It has been necessary in some instances to enforce the regulations of health boards in this respect by application to the courts Several such instances have occurred in Buffalo Tuberculous persons who are refractory in this respect may even be sent to the penitentiary where special quarters are set aside for them

Health Centers—Buffalo has three health centers, the last established at the Municipal Hospital 770 East Ferry Street The two centers first established were very successful in their work This led to the opening of a third center and others may possibly follow The outstanding feature of the work at these centers is their cooperation with the various private welfare agencies The scope of these health centers includes prenatal work, child welfare—not only immediately after birth but until school age—supervision of midwives, prevention of blindness and conservation of vision milk dispensaries egg dispensaries, dental dispensaries tuberculosis dispensaries and social service This cooperation prevents waste of energy and the duplication of work, it will also save expense

New York City

Eminent Chemist Dead—A telegram has just been received announcing the death in New York City, on December 20, of Dr Rudolph August Witthaus, aged 69, the eminent chemist and toxicologist, professor of chemistry and toxicology in the University Medical College, New York City, and Cornell University, and emeritus professor since 1911, the author of several standard works on chemistry, urinalysis and toxicology

Building Fund for Women's Medical College—At the meeting of the Woman's Guild of the New York Medical College and Hospital for Women it was announced that $25 000 has been pledged toward the $200,000 required for a new building for the college The largest gift, $10,000, came from W W Cole, and Cornelia C. Brant, the dean of the college, gave $2,000 Among the subscribers are 104 women and 99 men

NORTH DAKOTA

Obtains Position in Red Cross.—Dr Thomas J Strong Williston, has received appointment as Red Cross director with the American Red Cross in Germany

State Laboratory Charges Fees—Dr Leverett D Bristol University director of the State Public Health Laboratory announces that the State Board of Regents has authorized the charging of fees for all work which is not strictly public health work and which the laboratory is not called on to do by the law

Health Survey of State—Surg Carroll Fox U S P H S, has completed his health survey of North Dakota and states in his preliminary report that the chief needs of North Dakota are a sanitary engineer who will devote his whole time to the work and whole-time health officers and correlation in public health service

Smallpox—At Grand Forks, December 2, it is said there were thirty-six cases of smallpox The vaccination order had been generally obeyed by the schoolchildren Attorney-General Linde has given an opinion that the regulations requiring vaccination may be enforced, although this is contrary to an opinion delivered by his predecessor There were also many cases in East Grand Forks The disease was mild and no deaths had occurred The health board by resolution urged on the board of education that a rule requiring the vaccination of all schoolchildren be established——In an effort to suppress an epidemic of smallpox at Bismarck the school authorities have prohibited teachers to attend theaters and children to attend motion-picture shows and have made vaccination compulsory——The physicians of Mandan are at hard work in an effort to prevent the spread of the disease

Hospital Notes—The new hospital at Fort Yates, Standing Rock Reservation, which has been erected at a cost of $26 000 is practically completed and will be opened early in January——A site has been selected for the Crosby Hospital on the Herring farm adjoining the city The building is to be 50 by 70 and two stories in height.——C C Marson, Cooperstown has agreed to donate a half block within the city limits providing a hospital is built thereon, and a quiet campaign is being carried on to secure funds for the construction of the building

OHIO

Health Sunday—Health Sunday was observed in Youngstown November 28, when the pastors of twenty churches gave up their pulpits to physicians who delivered addresses on various phases of public health

Conserving Vision.—Cincinnati is about ready to form its third class in the schools for the conservation of vision During the previous two years 3,475 schoolchildren with defective vision were found, 1,179 or 51 per cent., of whom were provided with glasses up to June 20, 1915 Regulations for the admission of children to the special classes have been published

New Faculty Appointments—The following appointments have recently been made to the faculty of Western Reserve Medical School Dr Julius M Rogoff of Vanderbilt University Nashville, Tenn., instructor of experimental medicine, Dr Cyrus H Fiske, Harvard Medical School, Boston, associate in biochemistry, Dr Roy W Scott formerly demonstrator in medicine in Western Reserve University instructor in physiology

Vaccination.—Notices have been posted at the mills of the Carnegie Steel Company at Youngstown requesting all employees to submit to vaccination in accordance with the recommendation of the Youngstown Board of Health The company will not compel the employees to be vaccinated, but they are strongly urged to submit to this measure, which will be carried out free of charge The Youngstown Iron and Steel Company had previously made a similar request of the men, and it is believed that all other industrial concerns in the city will follow this plan

Personal.—Dr Frederick E Dilley, instructor in surgery in the Union Medical College, Peking, Chih-li, China, has returned and will take postgraduate instruction in Cleveland until next August——Dr Alfred Irving Ludlow, professor of surgery and surgical pathology in the Seoul Medical College, Korea, will sail for the Orient, June 8——Dr George Niel Stewart, director of the H K Cushing Laboratory of Experimental Medicine at Western Reserve University, Cleveland, has returned from abroad——Dr Herbert E Twitchell, Hamilton, has been appointed assistant surgeon at the National Military Home, Dayton——Dr Eli R Crew, superintendent of the Miami Valley Hospital, Dayton, is ill and under treatment in the hospital——Dr Fred B Larimore, New Philadelphia, is seriously ill in the Columbus Hospital as the result of a hemorrhage

Cincinnati

Scholarship Donated—Gifts of $600 each have been made by Henry Strauss, Casper H Rowe, Adam A Kramer and Albert Lackman for scholarships in the medical department of the Cincinnati University

Return After Tour of Medical Colleges—Dr Christian R Holmes and Profs Martin H Fischer and H M Knower of the University of Cincinnati and Architect Harvey Hanford have returned after two weeks' tour of inspection of medical colleges in the East, and during which they submitted plans for the new medical college to experts for their consideration and criticism

Personal—Dr Samuel J Holdberg has been appointed assistant clinical instructor of laryngology and otology in the medical department of the university——Dr Lewis Bader has resigned as receiving physician at the General Hospital and will take up Roentgen-ray work He has been succeeded by Dr Max Shaweker——Dr Earl A Martin, Mount Vernon, has been appointed assistant to Dr Harry Freudenberger of the Tuberculosis Sanatorium——Dr Eric A Fennel has resigned as physician in charge of the City Infirmary and the two house of refuge farms

OKLAHOMA

Free Antitoxin—Dr John W Duke, Guthrie, state health commissioner, announced that free diphtheria antitoxin will be distributed in all deserving cases

Research Department to Be Established—Announcement was made, December 1, by the officials of St Anthony's Hospital, Oklahoma, of the immediate establishment of a medical research laboratory to be in charge of Dr Abraham Sophian, New York City, and of the building of an addition to the hospital to cost $150,000

Personal.—Dr I H Lamar, Texhoma, who has been ill with typhoid fever in Kansas City, has recovered and returned home——Dr Albert M Chambers, McCurtain, was recently operated on for appendicitis——Dr Benjamin W Ralston, Lindsay, is convalescent after a severe attack of septicemia——Drs Ross D Long and George D McLean, Oklahoma City, are on duty with the Allies in France

New Organizations—The Tulsa Academy of Medicine was organized October 28, and the following officers were elected president, Dr W Forest Dutton, vice-president, Dr Robert S Wagner, and secretary-treasurer, Dr Paul N Atkins——Physicians in the Henryetta District organized the Henryetta Hospital Association, November 27, electing Dr Nathaniel N Simpson, president, and Dr C N Stevenson, secretary-treasurer The purpose is to found and build a modern hospital A favorable report was made at this meeting on the plans and finances

PENNSYLVANIA

Personal.—Dr Joseph D Findley has been selected as health physician of Altoona, succeeding Dr Jesse P Seedenburg, removed from the city——Dr Frank Horning, Hellam, is reported to be ill at his home

Addition to Sanatorium—The Philadelphia Sanatorium for Consumptives at Eagleville is installing a completely equipped Roentgen-ray department for scientific study and research in pulmonary tuberculosis Dr Gilbert M Neuberger has been appointed roentgenologist

Philadelphia

Mütter Lecture Postponed—Owing to illness in the family of Dr Rudolph Matas, New Orleans, the Mütter lecture and reception scheduled for December 17 was postponed

Physicians Motor Club House—Negotiations have been completed for a club house and supply station for the Physicians' Motor Club of Philadelphia This will be ready for occupancy and transaction of business very soon after Christmas

Personal—Dr Charles B Penrose, who was taken suddenly ill with pleurisy in Baltimore and removed to Johns Hopkins Hospital, has greatly improved and will return to his home in a few days——Dr Mary W Griscom, who recently returned from a trip through the Far East, visiting medical women in isolated stations, was the guest of honor at a dinner given December 16, at the Hotel Adelphia, by a number of her associates——Dr Frank W Swallow has been appointed assistant medical inspector in the bureau of health——Dr William Hewson has been appointed an assistant school medical inspector——Dr Wilmer Krusen, the new director of health and charities, was the guest of honor at a dinner given at the home of Dr Frank C Hammond, December 9

Duhring Annex Dedicated—The Duhring Memorial Building recently erected annex to the library of the University of Pennsylvania, was dedicated in the afternoon of December 13 A memorial tablet to the donor, Dr Louis Adolphus Duhring, class of 1867, medical department, clinical professor, professor and finally emeritus professor, was unveiled at the entrance of the annex Brief addresses were made by Maurice Jastrow and Joseph T Rosengartner Provost Edgar F Smith accepted the building on behalf of the university The new wing extends across the south end of the library, is of red terra cotta and brick work, the design being in keeping with the old structure This addition is a emmorial to the late Dr Duhring, who left more than a million dollars to the university

TENNESSEE

Personal—Dr James W McClaran, Jackson, has accepted a position in a war hospital in Paris——Dr Henry Berlin, Chattanooga, is reported to be seriously ill at his home

Minnesota Surgeon in Chattanooga—Dr J Minor Blackford, Rochester, Minn, delivered an address on December 10 before the physicians of Chattanooga on "Newer Cardiac Pathology and Diagnosis," illustrated by moving pictures

Physician Wins Suit—In the suit brought by the father of Hyram Henderson, Potts Camp, Miss, against Dr Frank D Smythe, Memphis, in which damages for $20,000 were claimed on account of negligence in performing a surgical operation, the jury rendered a verdict December 3, in favor of Dr Smythe

State Board Officers Reelected—At the annual meeting of the State Board of Health held in Nashville, November 6, the following officers were reelected Dr Rufus E Fort, Nashville, president, Dr Walter J Miller, Johnson City, vice president, and Dr Reese Q Lillard, Lebanon, secretary and executive officer

New Officers for Middle Tennessee Association—The forty-third semiannual meeting of the Middle Tennessee Association was held at Sparta, November 18 and 19 Dr Roy W Billington, Nashville, was elected president, Dr W Scott Farmer, Cookeville, vice president, and Dr John Witherspoon, Nashville, secretary-treasurer Lewisburg was selected as the next place of meeting

Sanatorium at State Prison Opened—The new modern tuberculosis hospital connected with the State Prison, Nashville, which has been erected at a cost of $40,000, was opened December 4 and 125 infected state prisoners were installed in the new institution Hereafter, all prisoners sent to the penitentiary will be carefully examined for tuberculosis at the time of their admission

Preventable Blindness—The campaign against preventable blindness is being pushed vigorously by organizations in Nashville A pamphlet has been prepared giving the state law on the subject, outlining the methods of preventing blindness in infants, and laying emphasis on the importance of the subject The pamphlet has been endorsed by the State Board of Health and the Nashville health authorities

TEXAS

Drug Law Violations—In the federal court at Fort Worth December 6, fourteen persons were sent to jail for violation of the antinarcotic law

North Texas Physicians Hold Meeting—The North Texas Medical Association held its annual meeting in Fort Worth December 7 and 8, and adjourned to meet in Greenville in June. Dr Charles R Johnson Gainsville, was elected president, Dr Claude O Harper, Fort Worth, vice president, Dr H Leslie Moore, Dallas, secretary (reelected for the thirty-second term), and Dr John H McLean, Fort Worth, treasurer

Diphtheria.—In October diphtheria was reported from fifty-three of the 252 counties in the state, the largest number of cases in any one county being forty one. There was a total of 554 cases Under contract made by the State Board of Health, antitoxin approved by the United States Public Health Service costs patients $4 per 10 000 units as against $12 50, the price formerly charged It has been concluded that if an average of 15,000 units was used in each case of diphtheria, at the new price there would be a saving of over $7,000 to the people of the state Distributing stations have been established in every *county of the state, although it is* believed the people are not all aware of this arrangement for distributing antitoxin

CANADA

Word from Saloniki.—The Toronto University Base Hospital is located 5 miles north of Saloniki on the road to Monastir Directly in front of their camp is the railroad to Nish At the present time there are about 500 patients, very few wounded soldiers, but mostly cases of typhoid dysentery and influenza.

Germany Refuses to Liberate Hon Dr Beland—The German government has refused to liberate the Hon Dr Beland, former postmaster-general of Canada who was captured at the fall of Antwerp They are willing however, to exchange him for a lieutenant of the German Army now in the London Tower under sentence of death for espionage

Canadian Appointments—The following Canadian physicians have been gazetted lieutenants R A. M C Drs C E Wilson, H C. Sutton, H B Moyle, H P Rogers, A W Nixon and H B Stacpoole, all of the Canadian Army Medical Corps——Drs James Donald, M MacAdam and Norman Ferguson have been appointed captains in the army service corps——Major J T Clarke, M D., formerly a practitioner in Toronto has been promoted to lieutenant-colonel and has been placed in charge of No 2 Stationary Hospital, Boulogne, France.

Toronto Convalescent Home Staff—For the returned soldiers in Toronto the medical staff of the Convalescent Home is being chosen by Lieut.-Cols Herbert A Bruce and Harry B Anderson, who will be chief surgeon and physician, respectively The following are the appointments so far named Drs Herbert J Hamilton, Goldwin Howland Jabez H Elliott, Brefney O Reilly, Robert W Mann, Harold Tovell, William J McCollum, D J Gibb Wishhart, Colin Campbell, George H. Burnham Newbold Jones, John A Oille, Arthur Wright, Charles B Shuttleworth, A. Muirhead, Charles Temple and Albert E Webster, M D, D D S

University Looks for Government Aid.—A deputation from Queen's University, Kingston, Ont, recently waited on the premier of Ontario and the provincial treasurer to ascertain the attitude of the government toward the future of that institution Three years ago Queen s severed its connection with the Presbyterian Church in Canada and following that the Mining School agreed to affiliate with the University The Ontario government has been giving Queen's an annual grant of $70 000 for the mining and medical branches On account of war conditions Queen s will have a deficit for the current year of $30 000, the large number of enlistments from the student body having brought about a decreased attendance and a consequent decrease in the fees received The government has promised to consider the matter

GENERAL

Correction—In the article by Woodyatt, Wilder and Sansum, The Journal, December 11, p 2068—the last sentence of the first paragraph second column, p 2069, should read—But if the glucose is given at a rate faster than 2 gm per kilogram and hour 50 per cent of all glucose injected appears in the urine, once constant conditions have been secured In the third paragraph the figures 3 6 gm should be 2 7 gm

Roentgenologists Unite—About seventy-five roentgenologists from Illinois, Indiana, Iowa, Missouri and Kentucky met in Chicago, December 15 and 16, and organized the Western Roentgen Society, electing the following officers president, Dr Fred S O'Hara, Springfield, Ill, vice presidents, Drs Miles B Titterington, St Louis, and Noble M Eberhart Chicago, secretary, Dr Thomas A Burcham, Des Moines, and treasurer Howard Raper, D D S, Indianapolis The next meeting will be held in Chicago, June 15 and 16, 1916

Compensation for Federal Employees—The American Association for Labor Legislation announces that the Kern-McGillicuddy Bill to provide just compensation for federal employees will be introduced into the new congress at an early day This bill, which was reported favorably by the judiciary committee of the last congress and has been endorsed by the Federal Bureau of Labor Statistics, American Federation of Labor and other bodies, was drafted to supersede the law of 1908 Nearly three quarters of the half million employees of the United States are not entitled to any compensation whatever for injuries and moreover, no injured workman can sue the national government for liability In the present year, eight states have adopted the workman's compensation bill far in advance of the existing law for federal employees while five of the thirty-three states which have workman's compensation law have adopted liberal and progressive amendments

Examination for Philippine Service—The United States Civil Service Commission announced that open competitive examinations will be held on January 8, for the positions of bacteriologist and pathologist (male), with a salary of $2 000 to $2,500 a year, and for assistant surgeon (male), with a salary of $1 800 a year The competitors will not be assembled for examination, but will be rated on education, experience and publication or thesis Applicants must be graduates in medicine and must have had special training in bacteriology, must be between 21 and 40 years of age, and must have executed the prescribed medical certificate Persons who meet the requirements and desire the examination, should apply for Form B I.A 2 and 2118 stating the title of the examination for which the forms are desired, and these applications should be sent to the United States Civil Service Commission at Washington, or to the secretary of any local United States Civil Service Board They must be filed prior to the hour of closing business on January 18

Deaths Abroad—Kenneth William Millican, M R C S, England, 1879, L R C P, Edinburgh 1880, for two years a member of the editorial staff of The Journal, died at his home in West Kensington London, November 28, aged 62 After graduating in medicine, Dr Millican was for several years an officer of the Royal Army Medical Corps in India and Africa and then came to this country While here he acted as associate editor of the *New York Medical Journal,* under the late Dr Frank P Foster, editor of the *St Louis Medical Review* and later became associated with The Journal In *1909* he returned to St Louis for a short time as editor of the *Bulletin of the Municipal Commission on Tuberculosis* and then returned to England as a member of the editorial staff of the *Lancet* Dr Millican's society affiliations included Fellowship in the American Medical Association and membership in the British Medical Association Missouri State Medical Association and St Louis Medical Society, of which he was once president Dr Millican was a gentleman of charming personality, a scientist of high rank and a writer of high literary ability

Death Rate in Registration Area in 1914—According to a bulletin issued by the Bureau of the Census, the total number of deaths recorded in the registration area in 1914 was 898,059 corresponding to a death rate of 13 6 per thousand population This rate is said to be the lowest on record, the next lowest being for the year 1912 when the rate was 13 9 This has added significance by reason of the fact that the number of states in the registration area has increased since 1912, the number now being twenty-five, comprising 66 8 per cent. of the total estimated *population in* the United States in 1914 The death rate for 1914 is said to be 16 per cent lower than the average for the five year period of 1901-1905 This means that in 1914 there were only 10 deaths, where ten years earlier there were 11 deaths Decreases in the death rate in the number of states of the registration area in 1914 as compared with 1901-1905 period are as follows Rhode Island, 17 4 *per cent*, *New York, 14*, *New Jersey* 11.8 Massachusetts, 11 4, Vermont, 7 4, Connecticut 3.8 Indiana 2 3 Maine, 1 9, and New Hampshire 1.8 Michigan showed a slight increase, 0 8 *per cent* It is shown that in cities of 100,000 or over the tendency is toward a still greater reduction In comparing the five year period 1901-1905 with 1914, the following reductions were shown in cities Jersey City, 28 5 per cent, New York, 25 8, San Francisco, 23 6, Denver, 23 3, Newark, N J, 22 5, Los Angeles, 21 3, Pittsburgh, 21 9, Atlanta, Ga, 21 8, Lowell, Mass, 21 3, and Paterson, N J, 20 1 The caution is given that these figures are crude rates and that inferences regarding the relative health advantages of different states should not be drawn without more thorough investigation

Report of the Surgeon-General of the U S P H S—The advance summary of the annual report of the surgeon-general shows that the organization under the broadened functions assigned to it by the law of 1912 has made possible the largest amount of work in its history Among the notable features of this work for 1915 enumerated in the summary are the conclusion, after seven years of investigation, that pellagra is a deprivation disease, the establishment of a new quarantine station at Galveston, and the transference of the station at Boston to the Public Health Service, eradication of plague from New Orleans, and the establishing of extensive rat-proofing and other antiplague measures, great reduction in the incidence of malaria where surveys were conducted, and the establishment in this connection of the fact that malaria is carried over the winter by persons infected with the disease rather than by hibernating mosquitoes, important knowledge gained from the study of occupational diseases and tuberculosis among industrial workers, and relating to the migration of persons suffering from tuberculosis, improvement in the powers and duties of health boards in five states, on the recommendations of the Public Health Service, investigation of the pollution of streams and the examination of shellfish, important studies of trachoma in the Appalachian Mountains, where over 12,000 cases were treated, rural sanitation work in six different states, resulting in the reduction of typhoid and other communicable diseases, and the establishment at Chicago, Seattle and other railway centers of public health laboratories for the prevention of the interstate spread of disease On account of the extension of relief benefits to the newly organized Coast Guard and the physical examination of seamen applying for the rating of "able seamen," the service asks for an increased force to take care of this additional work An additional building for the Hygienic Laboratory and the establishment of a national leprosarium are also recommended in the report

Bequests and Donations—The following bequests and donations have recently been announced

Harvard College, $75,000, the remainder of the bequest of Morrill Wyman to establish the Morrill Wyman Research Fund, the income to be applied to investigation by Harvard Medical School, into the origin, results, prevention and treatment of disease

Harvard Unit in France, $4,000, American Ambulance Field Service fund, $4,000, and New England Belgium relief fund, $3,537 39, being the amount collected in the stadium at the Harvard Yale football game

Children's Hospital, Brookline, Mass, $3,000 Boston Floating Hospital, $2,000, and Angell Memorial Animal Hospital, $2,000 by the will of Edward Friebe, Cohasset, Mass

Americus, Ga, Hospital Association, $2,500 by Mr and Mrs Frank Lanier, Americus, in memory of their son who died November 25

James Walker Memorial Hospital, Wilmington, N C, an annex for the treatment of children and nursing mothers, erected by Mr and Mrs James Sprunt, Wilmington, as a memorial to their deceased daughter, to cost $30,000

School of Medicine, of the University of Kansas, Rosedale, the balance of the estate of Dr Joseph Porter, Paola, appraised at from $27,000 to $37,000 the income only from this fund to be used, and of the income, $300 is to be used for a scholarship, the remainder to be used as thought advisable by the dean

University of Kansas, Rosedale, donations of three acres of land to be added to the campus from the Bell estate, Dr Marshall A Barber, Rosedale, and Mr H L Rose

United Hebrew Charities and Mount Sinai Hospital, New York City, each $2,500, Montefiore Home, $2,000, Home for Aged and Infirm Hebrews, Hebrew Infirmary and German Hospital, each $1,500 by the will of Bernhard Ulmann

Eaglesville (Pa) Sanatorium for Consumptives, about $4,000, the proceeds of a card party and dance given December 8, under the auspices of the Ladies' Auxiliary of that institution

Abbington (Pa) Memorial Hospital, a nurses' home to cost $50,000, on property adjoining the hospital, donated by George W Elkin, Sr, in memory of his wife

University of Pennsylvania for the use of its hospital, two ninths of the residue of the estate of William B Rawle, after the death of Mrs Rawle Children's Hospital, Philadelphia, establishment of a free bed to be known as the Charles Wallace Brocke Jr, free bed, by the will of the mother of Mr Rawle on the death of his wife

Children's Aid Society, Country Week Association, Society for Protection of Children from Cruelty, and Sanatorium Association for Children, $4,000 each, by the will of Henry A Rogers

Children's Hospital, Philadelphia, a bequest of $10,000 for the endowment of a free bed in memory of her son George, by the will of Emily M Price

Women's Homeopathic Hospital, $5,000, by the will of Mary E Harbeson

American Oncologic Hospital and Kensington Dispensary, each $1,000, by the will of Maggie Green

LONDON LETTER

London, Nov 26, 1915

The War

THE TYPHOID GROUP OF DISEASES

The immense experience of the war is extending our knowledge of disease in several directions In previous letters it has been shown that, thanks to the excellence of medical arrangements, and to inoculation in particular, the incidence of typhoid fever among the troops has been very low The fact has come to light that a good many of the cases which clinically appeared to be typhoid fever were examples of paratyphoid fever Thus, in a recent discussion at the Royal Society of Medicine, Sir Bertrand Dawson stated that of 1,636 cases first regarded as typhoid fever, 910 proved to be paratyphoid Among them were many of the form of paratyphoid A which is little known in this country though common in India, the form paratyphoid B has been recognized in England for some time Observations in regard to inoculation tend to confirm the specificity of the several pathogenic micro-organisms responsible for the various forms of infectious disease Thus it has been shown that inoculation against typhoid infection does not confer immunity to paratyphoid, and that inoculation against the one infection does not increase susceptibility to the other It would seem that safety can be secured only by a number of inoculations, each directed to a specific end However, quite satisfactory results follow the practice of simultaneous mixed inoculation Thus Professor Dreyer reports that the injection of a vaccine containing in certain proportions the typhoid bacillus, paratyphoid bacillus A and paratyphoid bacillus B is followed in some cases by protection against all the three infections and in other cases by protection against two of them, and this without any greater immediate disturbance than is common in the ordinary antityphoid inoculation Professor Castellani has gone further and has used what he calls a tetravaccine, which aims at protection not only against the three infections mentioned but also against cholera His experience in Serbia includes 50,000 men, and he reports absence of immediate ill effects and the practical absence from the inoculated troops of the diseases in question

THE CARE OF THE BLIND SOLDIER

Soon after the outbreak of the war, the need was recognized of an institution for those sad cases of loss of the sight of both eyes from the injuries of warfare The Hostel of St Dunstan's, Regent's Park, London, was established, and is being maintained by the National Institute for the Blind, the British Red Cross, and the Order of St John of Jerusalem The Hostel, which was given by Mr Otto Kahn, stands in about 15 acres of ground It includes a portion of the Regent's Park lake, which affords facilities for rowing—a pastime keenly appreciated by the blind inmates The men come from the various military hospitals, and are afforded the opportunity of learning a trade by which they may earn a livelihood The occupations taught include carpentry, boot repairing, mat and basket making massage and telephony An interesting adjunct to the institution is the model farm, under the care of Captain Webber, a blind expert Here the men are taught market gardening, bee keeping and poultry farming, and by clever devices it is possible for the patients to carry on the work with success After a short period of training they can drive birds from one pen to another, catch any particular fowl, and collect eggs Arrangements have also been made for attendance at a neighboring public bath on certain days The exercise of swimming is much enjoyed by the men, and some of those who were nonswimmers are rapidly becoming experts in the art The Council of the National Institute for the Blind has placed at the disposal of the committee its seaside home at Brighton, where men can be sent to recuperate after discharge from hospital and previous to their taking up their training

THE RECRUITING OF MEDICAL STUDENTS

A scheme of recruiting the whole country for the army has been adopted Fit men are given the option of joining the army at once or being attested and placed in one of forty-six groups of all those aged from 18 to 40 years There are twenty-three groups for single men (each year of age constitutes a separate group) and twenty-three similar groups for married men The first group consists of single men aged 18, the forty-sixth group of married men aged 40 It is proposed to call the men up in the numerical order of the groups, except that men of 18 will not be called up for service until they have attained the age of 19 The special case of the medical student has given rise to a good deal of discussion As stated in a previous letter the War Office decided that in consequence of the great shortage of physicians, fourth and fifth year students should proceed with their course and qualify as soon as possible so as to be able to enter the army as surgeons On the other hand, students in the first, second and third years should if physically fit, join the army as combatants Exception has been taken to this rule because of the shortage of physicians which it will create in future years by withdrawing so many students from their studies But the authorities pointed out that the need of the army must be paramount at the present moment and that medical students who are generally men of good physique and full of spirit and courage make admirable combatant officers However some extension of exemption has been granted in the latest announcement from the War Office Students who at or before the close of the present winter session will be qualified for entry to one of the examinations for the third year students in medicine and duly enter for the examination for which they are studying will not be attested until after its conclusion and if they are successful will be included in the class of fourth year men.

THE BIRTH RATE AND THE WAR

At the Royal Sanitary Institute Dr Louis C. Parkes a well-known health officer and authority on hygiene read a paper on the national and social aspect of the lowered birth rate He said the birth rates of nearly all the European nations had been steadily decreasing during the past thirty years He estimated the total destruction of life in Europe in two years of war at nearly 20 000 000 persons. But in past ages of the world's history evolution of higher types in animal and vegetable life had resulted from cataclysmic changes, and great destruction by plague pestilence and famine had led to an advance in civilization So it was possible that Armageddon might be of ultimate benefit to humanity The figures for England and Wales for the past forty years showed that on the whole the birth rate had been falling faster than the death rate and the mean rate of increase, except for the first few years of the present century showed a downward tendency There was foundation for the belief that the lowering of the birth rate had been specially marked among the upper, the middle and the superior working classes Tables giving mean birth rates among other nations for the years 1910-1912 showed generally that nations largely agricultural had the highest birth rates while in the more highly industrialized countries the birth rates were lower With the exception of Bulgaria with a decided increase in the rate of 3.6, and of Ireland and Roumania, with very slight increases most of the nations which furnished statistics showed lowered birth rates in the course of the last quarter of a century After the war a government commission should be appointed to make exhaustive inquiry into the whole question with a view to taking measures of social and economic amelioration With a happy combination of circumstances the country should start a new life and the replenishment of its young life on a sufficiently ample scale might be anticipated

Tuberculosis in the Boot and Shoe Industry

There is an unusually high incidence of tuberculosis in the boot and shoe industry The means of dealing with this has been investigated by the Medical Research Committee appointed under the national insurance act for such purposes The high mortality is attributed to several factors among these being the sedentary nature of the employment and the attitude adopted, the presence of infected workers who are by circumstances favorably placed for disseminating bacilli among their neighbors the lack of sufficient daylight and adequate ventilation and the presence of infected dust The economic as well as hygienic advantage of so-called play intervals is insisted on A quarter of an hour interval at 11 a m and again at 4 p m is suggested and opportunity for Swedish drill or for games It has been shown that more and better work is done with than without such intervals The importance of ventilation and keeping the factories adequately cool is also insisted on

BERLIN LETTER

Berlin Nov 9, 1915

Birth Rate and Nurslings' Mortality in the Large German Cities During the War Period

The records of the imperial health bureaus of twenty-six German cities having more than 200 000 inhabitants show as was to be expected, that with the beginning of the tenth month of the war the number of living new born has diminished considerably For instance, in Berlin during the month of April the birth rate was 17 against 79 in the same month of the previous year Exactly nine months after the declaration of war during the first week of May, 99 fewer children were born in Berlin than during the previous year In the second week 138 and in the last week of May 198 fewer children were born and during the second week of June the decrease was 244 This is the height of the growth of the lowering of the birth rate The diminution thereafter was usually below 200 In the other large cities there was in part an increase during the month of April but beginning with May there was a considerable diminution The one exception is the city of Essen but even here the increase in the number of births was due to an increase in population In Cologne the diminution was the least but here, as in Essen the death rate during the first year of life was increased Elsewhere this death rate was diminished One must not construe however that there was a general falling off in the death rate of infants because arriving at such a conclusion one must estimate how many deaths occur among the nurslings born during that time

Value of Prophylactic Immunization in Typhoid

During the Franco-Prussian war there were 74 205 cases of typhoid from 8 to 9 per cent of the whole number of soldiers There were 8 904 deaths, or about 1 per cent, of the total strength of the army More than one half, 60 per cent, of the total loss for all the troops was caused by typhoid The observations made during the prophylactic immunization of the troops in Southwest Africa showed that among protected soldiers there were fewer and less severe cases of typhoid than among the unvaccinated soldiers The death rate among the vaccinated was 4 per cent, among the unvaccinated 11.1 per cent Therefore vaccination against typhoid is not an absolute protection against the disease but typhoid in a vaccinated person runs a very mild and much more favorable course. In those vaccinated more than once the course of the disease was even more favorable Positive conclusions as to the value of such vaccination in the present war cannot as yet be drawn but the numerous observations that have been made enable one to express an opinion as to the value of this prophylactic immunization Goldscheider and Koner have reported that in addition to vaccination prophylactic sanitary measures were prescribed and to these a large measure of the success obtained must be ascribed The vaccination therefore was only an operating factor in the reduction of the number of cases of typhoid and the death rate from typhoid The course of the fever was much less severe among the vaccinated than among the unvaccinated The temperature was lower but the duration of the fever was not appreciably shortened There is almost a complete absence of headache, restlessness and delirium and convalescence is rather rapid Fewer complications are met with among the vaccinated, especially is this true of the disastrous effects on the heart muscle and when complications did occur they were much less severe Among the soldiers vaccinated twice the course of the disease was even more favorable Among the vaccinated the death rate was 6.9 per cent., among the unvaccinated the death rate was 12 per cent One must not forget that the general hygienic prophylaxis which can be carried out during war time is not comparable with the prophylaxis in time of peace and therefore the prophylactic immunization against typhoid undoubtedly is of much greater value in peace than in war However we must admit that such immunization is of very great value especially in war times

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Marriages

Charles John Hufnagel, M D to Miss Lucina Kirst, both of Cannelton Ind., November 25

Philip Newton M D., Washington D C., to Princess Shahofskaya of Petrograd, Russia recently

Walter S Clack M D to Miss Elizabeth Haley, both of Rockwood Tenn December 8

Clara Pauline Seippel, M D, to Robert A. Widdowson, both of Chicago in Minneapolis December 11

Frank Murray Scheele, M D, Waukesha Wis., to Miss Emma Edmonds of Wauwatosa, Wis, December 1

Allen Wheeler Holmes M D., Dansville N Y., to Miss Clara Lillian Merrill of Hamilton Mass December 7

Margaret Cartwright M D to Joel B Good, both of Albuquerque, N M November 30

F Stuart Graves M D to Miss Louise Brown, both of Louisville, Ky., December 11

Deaths

George Peaslee Shears, M D New York University, New York City, 1886, aged 53, a member of the Medical Society of the State of New York, clinical professor of obstetrics in the New York Polyclinic Medical School, chairman of the board of directors of the City Hospital, Blackwell's Island, attending obstetrician to the City, Misericordia and New York Polyclinic hospitals, died at his home in New York City, December 12, from cerebral hemorrhage

Edward H Thrailkill, M D Kansas City Medical College, Kansas City, Mo, 1890, aged 52, a Fellow of the American Medical Association, professor of rectal surgery in the University of Kansas, rectal surgeon to St Joseph's and the Swedish hospitals, Kansas City, proprietor and manager of Thrailkill's Sanitarium for Diseases of the Rectum, Kansas City, died at his home in Kansas City, December 7, from the effects of an overdose of chloroform

Frank Joseph Sykora, M D Chicago College of Medicine and Surgery, 1909, aged 38, formerly a Fellow of the American Medical Association, a member of the Minnesota State Medical Association and well-known as a surgeon of Brainerd Minn, a director of the Brainerd City Bank, died in St Joseph's Hospital, St Paul, November 17, from disease of the intestines for which three operations had been performed

Erastus Perry Swazey, M D College of Physicians and Surgeons in the City of New York, 1869, aged 68, a Fellow of the American Medical Association and a well-known practitioner of New Britain, Conn, who had been ill for a long time with disease of the heart and kidney, died at his home in New Britain, November 13, from cerebral hemorrhage

James Irving Cawley, M D University of Pennsylvania, Philadelphia, 1877, aged 62, formerly a Fellow of the American Medical Association, a member of the Medical Society of the State of Pennsylvania, register of wills of Bucks County, Pa, and postmaster of Springtown where he had practiced for thirty-six years, died at his home December 10

Michael M Leahy, M D University of Glasgow, Scotland, 1857, University of Dublin, Ireland, 1862, Jefferson Medical College, 1883, aged 75, a Fellow of the American Medical Association, for many years a practitioner of Chicago, but for the last twenty years a resident of Montana, died at his home in Anaconda, Mont, December 15

George K Binkley, M D University of Pennsylvania, Philadelphia, 1873, aged 69, a Fellow of the American Medical Association, president of the Schuylkill County (Pa) Medical Society, a veteran of the Civil War and a well-known practitioner and druggist of Orwigsburg, Pa, died at his home in that place, December 4

William Brewster Millwee, M D Castleton (Vt) Medical College, 1848, aged 89, one of the oldest practitioners of Greenwood County, S C, first president of the Greenwood Oil Mill and vice president of the Bank of Greenwood, once mayor of Williamston, died at his home in Greenwood, December 1

Benjamin H Perce, M D Medical College of Indiana, Indianapolis, 1873, aged 77, a member of the Indiana State Medical Association and for two terms president of the Madison County Medical Society, a veteran of the Civil War, died at his home in Anderson, Ind., December 3, from nephritis

Lewis Frey, M D University of Pennsylvania, Philadelphia, 1888, aged 52, formerly a Fellow of the American Medical Association, visiting physician to the State Hospital and the Consumptive Hospital, Scranton, Pa, died suddenly at his home in Scranton, December 6, from angina pectoris

C Robert Martin, M D Miami Medical College, Cincinnati, 1866, aged 73, one of the oldest practitioners and druggists of Henry County, Ky, and one of the directors of the Deposit Bank of Sulphur, Ky, died at his home in that place, December 9, from cerebral hemorrhage

Ira Dean Payne, M D University of Iowa, Iowa City, 1880, Bellevue Hospital Medical College, 1886, aged 63, who after many years of practice in Linton, Iowa, retired five years ago and moved to Des Moines, died at his home in that city, September 7, from heart disease

James E Gauline (license, Maryland), for more than twenty-two years connected with the Home Friendless Society, Waverly, Baltimore, died at his home in that place, December 3, from cerebral hemorrhage

James Garrett Linthicum, M D University of Maryland, Baltimore, 1859, aged 81, formerly professor of the practice of medicine in Baltimore University, a member of the Baltimore city council for four terms, died at his home in West Baltimore, December 7, from pneumonia

Jesse Lincoln Melton, M D Hospital College of Medicine, Louisville, 1902, aged 55, formerly a member of the Kentucky State Medical Association, and until a year ago a practitioner of Shelbyville, Ky, died at his home in Louisville, December 10, from typhoid fever

Rhys Williams, M D Western Pennsylvania Medical College, Pittsburgh, 1894, aged 46, of Federal, Pa, for twenty years a practitioner of the Bridgeville District and director of the Bridgeville Trust Company, died at his home in Federal, about December 11

John A. Kirkland, M D Jefferson Medical College, 1885, aged 59, a Fellow of the American Medical Association, for many years a member of the school board of Cambridge, Ill, and a well-known ornithologist, died at his home in Cambridge, December 10

Henry Manning Fish, M D Hahnemann Medical College, Chicago, 1900, aged 62, a Fellow of the American Medical Association and American Academy of Ophthalmology and Oto-Laryngology, a well-known specialist, died at his home in Chicago, December 11, from pneumonia

Ellis Henry Bishop, M D Bennett Medical College, Chicago, 1905, aged 43, a Fellow of the American Medical Association, died at his home in Neponset, Ill, December 5, from an overdose of medicine taken for the relief of acute gastritis

Carl Martinus Nielsen, M D University of Copenhagen, Denmark, 1885, Bennett Medical College, Chicago, 1893, aged 59, president of the Scandinavian-American Medical Society, Chicago, died at his home in that city, December 14

Lloyd McDonald Burgess, M D Marion-Sims Medical College, St Louis, 1893, aged 44, a Fellow of the American Medical Association, died at his home in Delta, Colo, September 5, six months after an operation for cholecystitis

John W Davis, M D Georgetown University, Washington, D C, 1860, aged 78, a veteran of the Civil War, and a resident of Lansing, Iowa, for more than fifty years, died at his home in Lansing, December 6, from heart disease

John Jackson Esmond, M D University of Toronto, 1877, aged 63, for several years a practitioner and postmaster of Tracy, Mo, but for nearly twenty years a practitioner of Kansas City, Mo, died at his home in that city, December 8

P Watt Cate (license, Tennessee, 1889), aged 61, for thirty-two years a practitioner of Charleston, Tenn, but who made his home for two years with his daughter at Solano, N M, died at his home near Charleston, December 10

Lomax Anderson, M D University of Alabama, Mobile, 1879, aged 69, a Confederate veteran and an active practitioner of Jackson, Miss, until his retirement in 1908, died at his home in that city, December 9, from nephritis

Jacob B Lewis, M D Eclectic Medical Institute, Cincinnati, 1893, aged 44, formerly of Boise, Idaho, and for four years physician of Ada County, died on his stock ranch near Meridian, Idaho, December 5, from pneumonia

Jeremiah Elwood Sayre, M D Jefferson Medical College, 1883, aged 63, for twenty-five years a member of the board of education of Red Bank, N J, died at his home in that place, December 11, from cerebral hemorrhage

Wiley M Baird, M D University of Nashville, Tenn, 1861, aged 75, a Confederate veteran and for one term state senator from the Jackson County District, Ark, died at his home in Bentonville, Ark, December 4

George W Haislip, M D Jefferson Medical College, 1882, aged 57, a member of the Medical Society of Virginia and a well-known practitioner of Lorton, Va, died in the Sibley Hospital, Washington, D C, December 5

Richard James Sadlier Wheeler, M D L R C P, L R C S, Edinburgh, 1884, M D, University of Edinburgh, 1894, aged 53, of Birtle, Man, died in the Winnipeg General Hospital, September 17, from cerebral hemorrhage

Joseph Etienne Gendron, M D Dartmouth Medical School, Hanover, N H, 1871, aged 72, of Worcester, Mass, died in St Vincent's Hospital in that city, October 5, from intestinal obstruction

Samuel C Corbett, M D Victoria University, Coburg, Ont, 1867, aged 70, a resident of Winnipeg, Manitoba, from 1882 until a short time ago, died at Vancouver, B C, September 18

Thomas Miller, M D Howard University, Washington, D C, 1884, aged 58, a member of the Medical Society of the District of Columbia, lecturer on anatomy and diseases of children in his alma mater, died at his home in Washington, November 30

William Lewis Suesholtz, M D Long Island College Hospital, Brooklyn, 1907, aged 43, a member of the Medical Society of the State of New York died at his home in Brooklyn, November 26, from the effects of an overdose of acetanilid

Frank D Wheeler, M D Detroit Medical College, 1880, aged 60, a Fellow of the American Medical Association and prominently identified with the medical work of Detroit for more than thirty years, died at his home in Detroit, November 27

Laura J Ross Wolcott, M D Women's Medical College of Pennsylvania, Philadelphia, 1856, aged 82, said to have been the third woman in the United States to receive a degree in medicine, died at her home in Chicago, December 8

Francis Coffin Martin, M D Harvard Medical School, 1883, aged 57, formerly a member of the Massachusetts Medical Society and a Fellow of the American Academy of Medicine, died at his home in Roxbury, Boston, December 3

Freeman Hardin Hornibrook, M D College of Physicians and Surgeons, Chicago, 1902, aged 37, a member of the Iowa State Medical Society, was found dead at his home in Cherokee, Iowa, November 30, from cerebral hemorrhage

Patrick Henry Bumster, M.D New York University New York City, 1893 aged 56, visiting physician to St John's Hospital Long Island City, N Y, died at his home in Long Island City, December 1, from hemorrhage of the stomach

Patrick J Marren, M D Medico-Chirurgical College of Philadelphia, 1896, aged 43, a member of the Medical Society of the State of Pennsylvania, died at his home in Bellevue, Pittsburgh, November 28 from pneumonia

William E Scriber, M D Michigan College of Medicine, Detroit, 1883, aged 46, a member of the Michigan State Medical Society, died at his home in Detroit, December 3, from septicemia following a carbuncle of the neck

John H Ashcraft, M D Jefferson Medical College, 1855, aged 82, an honorary member of the Gloucester County, N J, Medical Society, died at his home in Mullica Hill, N J, September 26, from carcinoma of the back

Louis Lee Abbott, M D Tulane University, New Orleans, 1898, aged 52, a member of the Louisiana State Medical Association, a practitioner and druggist of New Orleans, died at his home in that city November 30

John Wallace Allison, M D Cincinnati College of Medicine and Surgery 1877 aged 62, twice a representative from Kankakee County in the Illinois State Legislature, died at his home in Essex, Ill., December 4

Hiram Parker Trull, M D University of Buffalo, N Y, 1868, aged 73, a member of the Medical Society of the State of New York, died at his home in Williamsville, N Y, September 14, from arteriosclerosis

Nathaniel A Gray (license, Milwaukee, 1899), aged 75, a member of the State Medical Society of Milwaukee and a practitioner since 1867, died at his home in Milwaukee, November 25, from pneumonia

Stephen Horace Murphy, M D Bellevue Hospital Medical College 1879, aged 62, until 1904 a practitioner of New York state, died at his home in Spokane, Wash., November 11, from carcinoma of the palate

Francis O Hawley, M D University of Edinburgh, Scotland 1868 aged 69, city physician and health officer of Charlotte N C, died at his home in that city, September 14, from cerebral hemorrhage

C Beverly Martin, M D Hospital College of Medicine, Louisville, 1903, aged 35, a member of the Kentucky State Medical Association, died suddenly at his home in Greenville, Ky., December 1

Lewis Lanzer, M D Eclectic Medical College of the City of New York, 1892, University of Tennessee, Nashville, 1896, aged 50, died at his home in Brooklyn, December 3, from diabetes

James S Miller, M D University of Louisville, Ky., 1877, aged 62, president of the Titus County (Texas) Medical Society in 1910, died at his home in Mt Pleasant, Texas, November 28

Jule E Marcus, M D Cincinnati College of Medicine and Surgery, 1871, aged 64, a member of the Ohio State Medical Association, died at his home in Walnut Hill, Cincinnati, December 6

Alexander C Faivre (license, Crawford County, Pa, 1881), aged 78, for many years a practitioner of Meadville, Pa, died at the home of his daughter in that city, November 26

Abraham Turner Fulton, M D New York University, New York City, 1882, aged 60, of Mount Vernon, Ohio, died in the Mount Vernon Hospital, November 29, from nephritis

Erner Jones, M D Memphis Hospital Medical College, 1882, aged 38, formerly a member of the Arkansas Medical Society, died at his home in Harrell, Ark, November 28

Brice M Sprayberry, M D Georgia College of Eclectic Medicine and Surgery, Atlanta, 1882, aged 68, died at his home near Ellenwood Ga, December 4, from nephritis

Gabriel F Thornhill, M D Hering Medical College, Chicago, 1898, aged 56, of Paris, Texas, died suddenly, in his automobile, December 6, from cerebral hemorrhage

Joseph A Kohout, M D University of Nebraska, Omaha, 1905, aged 35, formerly of Ord, Neb, died at his home in Cuba, Kan, about November 10, from tuberculosis

George Besson McCosh, M D Rush Medical College, 1880, aged 58, a practitioner and druggist of Morris, Ill, died at his home in that place, December 5

George Henry Wilkins, M D New York Homeopathic Medical College New York City, 1883, aged 60, died at his home in Newtonville, Mass, November 17

Bernhardt S Schwarz, M D American Medical College, St Louis 1897, aged 74, formerly of Kansas City, died at his home in San Francisco, December 6

Wesley Queen, M D Physio-Medical Institute, Cincinnati, 1864, aged 79, of Lincoln, Neb, died at his home in that city, December 12 from senile debility

Joseph Hormisdas Boucher, M D Laval University, Montreal 1884, aged 59, died at his home in Woonsocket, R I, September 25 from arteriosclerosis

Henry Miller Hewitt, M D Rush Medical College, 1878, of Franklin Grove, Ill, and Chicago, died at the home of his aunt in Dixon, Ill, November 29

Onofrio Abruzzo, M D College of Physicians and Surgeons in the City of New York, 1883, aged 74, died at his home in Brooklyn, December 7

Thomas Jefferson Slayden, M D Vanderbilt University, Nashville Tenn 1887, aged 55, died at his home in St Bethlehem Tenn., December 1

V R Kneberg, M D Homeopathic Medical College of St Louis, 1889, aged 66, died at her home in Chetoka, Kan, November 16, from peritonitis

William Martin Moran, M D Bellevue Hospital Medical College, 1887, aged 61, died at his home in Boston, September 2 from angina pectoris

George Slocomb Wilson, M D Eclectic Medical College of the City of New York, 1881, aged 76, died at his home in Boston, November 30

John B DesRochers (license, Washington, 1889), aged 66, formerly of Spokane, Wash, died at his home in Tacoma, Wash, December 2

Ella M Fowle, M D Hahnemann Medical College, Chicago 1893, aged 61, died at her home in Denver, November 25, from carcinoma

Henry T Fisher, M D Lincoln Memorial University, Knoxville, Tenn, 1891, aged 67, died at his home in Knoxville, November 27

John E Robinson, M D Louisville Medical College, 1876, aged 63, died at his home in Bethany, Miss, November 9, from paresis

Thomas R Allen, M D Homeopathic Hospital College, Cleveland, 1866, aged 71, of Ionia, Mich, died in Chicago, December 4

Stanard D Harris (license, Michigan, nineteen years' practice, 1900), aged 79, died at his home in Holly, Mich, December 1

Charles F Burger (license, years of practice, Michigan, 1900), aged 84, died at his home in St Clair, Mich., December 2

Silas C Myers (license, years of practice, Iowa, 1887), aged 64, died at his home in Waterloo, Iowa, November 29

Albo Miller, M D Jenner Medical College Chicago, 1904, aged 51, died at his home, December 1, from heart disease

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

POSLAM AND SOME OFFICIAL OINTMENTS

The following inquiry was recently made by a physician who asked that his name be omitted

> "One of my patients is anxious to learn something about Poslam, an alleged eczema cure I should like to know if the composition of Poslam has ever been published Are there any official products similar to it?"

Poslam was discussed in The Journal, May 22, 1909, page 1678 and on page 612 of "Nostrums and Quackery" (Second Edition) The results of a chemical analysis of this preparation made in the A M A Chemical Laboratory as published in these articles indicated that Poslam consisted of

Zinc oxid	12 01 parts
Sulphur	6 67 parts
Corn starch	22 00 parts
Tar oil	15 18 parts
Menthol	
Salicylic acid	
Fatty base, of each sufficient to make	100 00 parts

The results of the analysis were commented on as follows "From the results of the analysis it can be seen that the preparation depends for its action on such simple remedies as zinc oxid, sulphur and oil of tar These have long been used and known as more or less effectual remedies for the treatment of skin affections, but certainly do not warrant such claims as are made in the advertising matter sent out with poslam stating it to be 'The newest medical discovery for the treatment of eczema and all other skin affections' and ' entirely different from anything yet used ' "

For skin affections which may be benefited by ointments the official pastes and unguents should be kept in mind Needless to say these are as effective as the proprietary products and have the added advantage of being of known and more uniform composition Among the pastes may be mentioned

LASSAR'S NAPHTHOL PASTE
(Pasta Naphtholi, Lassar)

	gm or c c	
Betanaphthol (U S P), in very fine powder	10	gr xlviij
Precipitated sulphur (U S P)	50	ʒ iv
Petrolatum (U S P)	20	ʒ iss
Soft soap (U S P) sufficient to make	100	℥ j

Triturate the betanaphthol and sulphur with the petrolatum and then incorporate the soft soap with the mixture

LASSAR'S MILD RESORCIN PASTE
(Pasta Resorcini Mitis, Lassar)

	gm or c.c	
Resorcinol (U S P)	10	gr xlviij
Zinc oxid	25	ʒ ij
Starch	25	ʒ ij
Liquid petrolatum (U S P) sufficient to make	100	℥ j

Thoroughly levigate the zinc oxid with sufficient of the liquid petrolatum to make a thin paste Reduce the resorcin to a very fine powder, mix with the starch and add the mixture to the zinc oxid paste, triturating until a uniformly smooth mixture is obtained Then add the remainder of the liquid petrolatum, and incorporate it thoroughly

LASSAR'S ZINC-SALICYL PASTE
(Pasta Zinci, Lassar)

	gm or c c	
Salicylic acid, in fine powder	2	gr x
Zinc oxid	24	ʒ ij
Starch	24	ʒ ij
White petrolatum (U S P) sufficient to make	100	℥ j

Thoroughly levigate the zinc oxid with a portion of the petrolatum, then add the salicylic acid, the starch and the remaining petrolatum, and triturate until a perfectly smooth mixture is obtained

UNNA'S SOFT ZINC PASTE
(Pasta Zinci Mollis, Unna)

	gm. or c c.	
Zinc oxid	20	ʒ ij
Calcium carbonate	20	ʒ ij
Linseed oil	20	ʒ ij
Lime water sufficient to make	100	℥ j

Thoroughly levigate the zinc oxid and the calcium carbonate with the linseed oil, gradually added, so as to form a perfectly smooth mixture, then incorporate the lime water by trituration

UNNA'S SULPHURATED ZINC PASTE
(Pasta Zinci Sulphurata, Unna)

	gm or c.c	
Zinc oxid	15	gr lxxij
Precipitated sulphur (U S P)	10	gr xlviij
Silicic acid	5	gr xxiv
Benzoinated lard (U S P) sufficient to make	100	℥ j

Thoroughly levigate the zinc oxid with a small portion of the benzoinated lard, the silicic acid with another, and the precipitated sulphur with a third portion Mix the three portions until a uniformly smooth mixture results, and thoroughly incorporate the remainder of the benzoinated lard

COMPOUND RESORCIN OINTMENT
(Unguentum Resorcini Compositum)

	gm or c c	
Resorcinol (U S P)	6	gr xxx
Zinc oxid	6	gr xxx
Bismuth subnitrate	6	gr xxx
Oil of cade	12	ʒ j
Paraffin	10	ʒ j
Petrolatum	25	ʒ ij
Hydrous wool fat sufficient to make	100	℥ j

Triturate the resorcinol, zinc oxid, and bismuth subnitrate with a small quantity of the hydrous wool fat, until a perfectly smooth mixture is obtained Incorporate this with the remainder of the wool fat, add the paraffin and petrolatum, previously melted together, and lastly, the oil of cade Mix intimately, and preserve the ointment in containers protected from the light

COMPOUND SULPHUR OINTMENT
(Unguentum Sulphuris Compositum)

	gm or c.c.	
Precipitated calcium carbonate	10	gr xlviij
Sublimed sulphur	15	gr lxxij
Oil of cade	15	gr lxxij
Soft soap (U S P)	30	ʒ ij
Lard sufficient to make	100	℥ j

Mix the lard with the soft soap and oil of cade Then gradually incorporate the sublimed sulphur and precipitated calcium carbonate

COMPOUND TAR OINTMENT
(Unguentum Picis Compositum)

	gm or c c	
Oil of tar	4	gr xx
Tincture of benzoin (U S P)	2	gr x
Zinc oxid	3	gr xv
Yellow wax	25	ʒ ij
Lard	32	ʒ iiss
Cotton seed oil sufficient to make	100	℥ j

Melt the yellow wax and lard with the cotton seed oil at a gentle heat Add the tincture of benzoin, and continue heating until all the alcohol has evaporated Then withdraw the heat, add the oil of tar, and finally the zinc oxid, incorporating the latter thoroughly, so that on cooling, a smooth, homogeneous ointment may result

Correspondence

Effects of Athletic Competition on Childbirth

To the Editor —There seems to be a division of opinion among those interested in physical education as to the effects of strenuous athletic competition during adolescence on parturition The consensus of opinion, apparently supported by the fact that the foreign-born American woman or those actustomed to hard life have an easier labor than the American woman of nervous temperament, seems to be that athletics are beneficial at all times, except possibly at the menstrual periods

Besides the many factors, such as heredity, increased sensory conduction and reception, deficient muscular forces, etc, that influence childbirth, I believe there is a marked difference on the pelvis in the physiologic effect of the exercise performed

The type of exercise (work) of the working woman has its predominating effect on the musculatures of the trunk and upper extremities The movements are invariably rhythmic, slow and continued over a long period of time with a minimum stress and strain on the pelvis The character of athletic movements is entirely different Here the body weight is quickly shifted from one foot to the other, and there are sudden stops, starts and twists, with a maximum stress and strain on the pelvis

In the latter condition the pelvis is apt to show more rigidity, and there is a generally increased muscular development, which is better adapted to sudden spasmodic effort In the former case, there is a maximum muscular development with a minimum rigidity of the pelvis, and the musculature is more trained to continuous muscular exertion, which more readily meets the demands of labor

I have been endeavoring to obtain data confirming or disproving the foregoing theory, and should like to hear from others interested in the subject I have prepared for circulation a questionnaire and case-record blank, copies of which I shall be glad to furnish on request The questionnaire covers the following points

1 Is labor more difficult in the athletic girl, and if so, why?
2 *If strenuous athletics are detrimental, what form of* exercise would you advise?
3 At what period in a girl's life is the most injury done?

The history and record blank is a tabulated form to obtain

1 Paternal and maternal histories as to physical characteristics
2. Type, duration, etc., of the forms of athletics engaged in
3 Character of the pelvis, of labor, etc
4 Size, health, etc., of child

G Bigelow Mullison M D,
5615 Girard Avenue, Philadelphia

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request

CU CO BA TARRANT

To the Editor —What is there to all this?
W E Delaney M D Williamsport Pa

Answer.—"This" is a circular letter in which it is asserted that

'More favorable results are reported from the administration of CU-CO-BA, Tarrant in cases of pyelitis, inflammation of the bladder, urethritis, urethro-blenorrhea, vaginitis, leucorrhea than from any other combination"

Cu-co-ba, Tarrant (Tarrant Company, New York) is described as 'a preparation of the purest and most highly esteemed variety of balsam copaiba with a concentrated extract of cubebs" It appears to be one of the balsamic preparations for internal use that formerly were in vogue as a routine measure in the treatment of gonorrhea Little reliance is now placed in this form of treatment by the medical profession, but a portion of the public still has faith in it.

LITERATURE ON WAR SURGERY

To the Editor —Please give me information or send me literature on war surgery
Robert W Shipp M D Austin Texas

Answer.—The following is a list of references to articles which have been published in The Journal on this subject. The index of the current literature for the past year and a half contains numerous references under the headings of war, wounded soldiers, etc.

Mills L. Projectile Wounds of the Head Experiences During Recent Service in Austria The Journal Oct 23 1915, p 1424
Wounds and Hydrogen Peroxid editorial The Journal Sept. 4, 1915 p 878
Sir Wiliam Osler on Wounds and Diseases in War The Journal Aug 7 1915, p 543
Drennen W E Experiences in Military Surgery The Journal July 24, 1915 p 296
Jablons B Pathology of War Surgery The Journal June 19 1915, p. 2045
War Experiences With Infected Wounds editorial The Journal, May 22 1915 p 1764
Mills L. Wounds Received in Battle The Journal, April 10 1915, p 1224
War Surgery editorial The Journal March 13 1915 p 912
Current Aspects of Military Surgery, editorial, The Journal, March 6, 1915, p 832
Blech G M Military Surgery, The Journal Jan 9 1915 p 167
Hoguet, J P Observations on Military Surgery in the Early Weeks of the War, The Journal, Dec 19 1914 p 2194

HYDROCHLORIC ACID IN GASTRIC JUICE—NICHROME WIRE AS A SUBSTITUTE FOR PLATINUM

To the Editor —1 Kindly inform me what are considered the normal free hydrochloric acid findings in gastric juice I was taught and have always considered from 25 to 30 tenth normal sodium hydroxid to be about correct Niles places it at 0 2 per cent. hydrochloric acid, but also states it as being from 15 to 25 tenth normal sodium hydroxid, which is not quite 0 1 per cent. Webster says from 0 2 to 0 3 per cent hydrochloric acid, and gives his figures as from 50 to 55 or from 0 18 to 0 2 per cent hydrochloric acid Lately articles in The Journal place it as high as 0 5 per cent Will you kindly clear this muddle for me?

2 Please supply me with the name of the wire which is used in place of platinum S Roy Mills M D, Braddock, Pa

Answer —1 It is fairly safe to assert that the average of free hydrochloric acid in normal pure gastric juice is higher than it was formerly stated to be Recent examinations of pure human gastric juice by Carlson show that the total hydrochloric acid averages 0 45 per cent and the free hydrochloric acid 0 4 per cent These figures apply to gastric juice obtained from one person, but data furnished from other sources indicate that they approximate the usual averages for pure gastric juice.

2 Nichrome wire

MEDICAL HISTORY

To the Editor —1 Do any of the medical colleges in the United States have chairs of medical history?

2 Please give me a list of the best books on the history of medicine

3 Please refer me to magazines dealing with medical history or publications which have a department of medical history I L. M

Answer —1 No Fourteen schools offer courses of from three to thirty hours, and these are usually optional

2 Such a list appeared in The Journal, Feb 7, 1914

3 Publications

Janus Archives internationales pour l'histoire de la médecine et pour la géographie médicale published in Amsterdam Bimonthly
Mitteilungen zur Geschichte der Medizin und der Naturwissenschaften Hamburg
Proceedings of the Royal Society of Medicine published by Longmans Green & Co, New York Section on History of Medicine.

ORTHOFORM NEW UNDER THE HARRISON LAW

To the Editor —Please tell me whether the sale of orthoform comes under the Harrison law The local druggist has been instructed by the manufacturers that the status of orthoform is undecided
J S White M D St. Paul

Answer —As orthoform is no longer on the market, we take it that our correspondent's inquiry refers to "orthoform-new" As stated in The Journal, Nov 20, 1915, p 1837, "Treasury Decision 2194 requires the registration of any 'artificial substance or preparation which is or may be substituted for cocain, alpha or beta eucaine, or any of their salts as ordinarily prescribed or used '" New and Nonofficial Remedies, 1915, p 35, states that "orthoform-new is a local anesthetic resembling cocaine in its local action It would seem that the treasury decision contemplates registration of orthoform-new

ARTICLES ON INTESTINAL CAUSES OF EPILEPSY

To the Editor —Where can I find recent literature on the intestinal causes of epilepsy? Austin M Grove M.D, York Pa

Answer.—The following is a list of articles on this subject

Cornwall E E. Clinical Study of Case of Epilepsy Apparently of Intestinal Origin *Arch Diagnosis* July 1915 abstr, The Journal Oct. 16, 1915, p 1404
Francaviglia M C Reflex Epilepsy from Intestinal Helminthiasis *Policlinico* Rome, Aug 1, 1915 abstr The Journal Sept 4, 1915 p 913
McCoy W K. Intestinal Intoxication Headaches and Epilepsy, *Lancet Clinic* April 24 1915
Reed C A L. Probable Cause and Logical Treatment of Epilepsy, The Journal March 27 1915, p 1047
Powers H Role of Gastric and Intestinal Stasis in Some Cases of Epilepsy *Boston Med and Surg Jour* Aug 7 1913 abstr, The Journal Sept. 6 1913, p 807
Berger, F Epileptic Seizures from Appendicitis, *Med Klin* Feb 18 1912
Axtell W H Acute Angulation and *Flexure* of the Sigmoid a Causative Factor in Epilepsy *Am Jour Surg* December 1910 abstr The Journal Jan 7 1911 p 74 *Am Jour Surg* August 1911 abstr The Journal Aug 26 1911 p 767
Skoog A. L. Focal Epilepsy, *Surg Gynec and Obst* December, 1911

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama Montgomery, Jan 11, 1916 Sec, Dr W H Sanders, Montgomery

Alaska Juneau, Jan 4, 1916 Sec, Dr Harry C DeVighne, Juneau

Arizona Phoenix, Jan 4 5, 1916 Sec, Dr John Wix Thomas, National Bank of Arizona Bldg, Phoenix

California Sacramento, Jan 11, 1916 Sec, Dr Charles B Pinkham, Room 527 Forum Bldg, Sacramento

Colorado Denver, Jan. 4, 1916 Sec, Dr David A Strickler, 612 Empire Bldg, Denver

District of Columbia Washington, Jan 11, 1916 Sec, Dr Edgar P Copeland, The Rockingham, Washington

Illinois Chicago, Jan 13 15, 1916 Sec, Dr C St. Clair Drake, Springfield

Indiana Indianapolis, Jan 11, 1916 Sec, Dr W T Gott, 84 State House, Indianapolis

Minnesota Minneapolis, Jan 4 7, 1916 Sec, Dr Thomas S McDavitt 814 Lowry Bldg, St. Paul

New Mexico Santa Fe, Jan 10, 1916 Sec, Dr W E Kaser, East Las Vegas

New York Albany, Buffalo, New York and Syracuse, Jan 25 28, 1916 Chief, Examinations Division, Mr Harlan H Horner, State Education Bldg, Albany

North Dakota Grand Forks, Jan 4-7, 1916 Sec, Dr G M Williamson, Grand Forks

Oklahoma Oklahoma City, Jan 11 12, 1916 Sec, Dr R V Smith, 502 Daniel Bldg, Tulsa

Oregon Portland, Jan 4, 1916 Sec., Dr L H Hamilton, Medical Bldg, Portland

Pennsylvania Philadelphia, Jan 18 20, 1916 Sec, Mr Nathan C Schaeffer, Harrisburg

Rhode Island Providence, Jan 6 7, 1916 Sec, Dr Gardner T Swarts, Providence

South Dakota Pierre, Jan 11, 1916 Sec, Dr P B Jenkins, Waubay

Utah Salt Lake City, Jan 3, 1916 Sec, Dr G F Harding, 407 Templeton Bldg, Salt Lake City

Washington Spokane, Jan. 4, 1916 Sec, Dr C N Suttner, Baker Bldg, Walla Walla

Wisconsin Madison, Jan 11, 1916 Sec, Dr J M Dodd, 220 E Second St, Ashland

Texas June Report

Dr M P McElhannon, secretary of the Texas State Board of Medical Examiners, reports the practical and written examination held at Austin, June 22-24, 1915 The total number of subjects examined in was 12, total number of questions asked, 132, percentage required to pass, 75 The total number of candidates examined was 139, of whom 136 passed, including 15 osteopaths, and 3 failed, including 1 osteopath Thirty-three candidates were licensed through reciprocity Seven candidates were granted reregistration licenses The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Chicago College of Medicine and Surgery	(1915)	90
Rush Medical College	(1910)	88
University of Louisville	(1915)	81, 89
Tulane University of Louisiana	(1885) 75, (1902)	83, 89, (1907) 89, (1910) 82, (1915) 86, 86, 88, 89, 89, 89, 90, 91, 92
Johns Hopkins University	(1913)	88, 90
Harvard University	(1908) 84, (1915)	86
St. Louis Coll of Phys and Surgs	(1914) 78, (1915)	76
Columbia University, College of Phys and Surgs	(1911)	92
New York Homeo Med Coll and Flower Hosp	(1915)	87
University of Pennsylvania	(1915)	83
Meharry Medical College	(1915)	76, 79, 81, 86, 86, 87, 89
University of Tennessee	(1912) 75, (1914) 86, 86, (1915)	76, 83, 84, 86, 92
Vanderbilt University	(1913) 88 (1914) 81, 83, (1915)	80, 81, 84, 84, 86, 87, 88, 88, 90 91, 92
Baylor University	(1915)	79, 81, 81, 83, 84, 84, 85, 86, 87, 87, 87 89, 91, 92 93
Southern Methodist University	(1915)	84, 85, 87, 90, 93
Fort Worth School of Medicine	(1915)	81, 81, 82, 84, 84, 85, 86, 86, 87, 87, 92
University of Texas	(1914) 92, (1915)	80, 82, 83, 84, 84, 84, 85, 85, 86, 86, 87, 87, 87, 88, 88, 89, 89, 89, 89, 89, 89, 90, 90, 91, 91, 91, 93, 93
National School of Medicine, Mexico	(1887) 75, (1893)	83, (1900) 82 (1901) 81
School of Medicine of Nuova Leon, Monterey	(1899)	78

FAILED

College	Year Grad	Per Cent.
Chicago College of Medicine and Surgery	(1914)	*
University of Tennessee	(1915)	*

LICENSED THROUGH RECIPROCITY

College	Year Grad	Reciprocity with
Arkansas Industrial University	(1889)	Oklahoma
Atlanta College of Physicians and Surgeons	(1902)	Oklahoma
Atlanta Medical College	(1894)	Georgia
College of Physicians and Surgeons, Chicago	(1905)	Arkansas
Jenner Medical College	(1912)	Arkansas
Rush Medical College	(1902)	Wisconsin
Kentucky School of Medicine	(1892)	Georgia
Louisville Medical College	(1896)	Georgia
University of Louisville	(1913)	W Virginia
Maryland Medical College	(1901)	W Virginia
Tufts College Medical School	(1903)	Missouri
Detroit College of Medicine	(1897)	Michigan
University of Michigan Medical School	(1909)	Minnesota
University of Minnesota	(1907)	N Dakota
Eclectic Medical University, Cincinnati	(1914)	Arkansas
Kansas City Homeo Med College	(1899)	Missouri
St Louis University	(1912) (1913)	Missouri
Medical College of Ohio	(1907)	Ohio
Miami Medical College	(1881)	Ohio
Ohio Medical University	(1898)	Ohio
Western Reserve University	(1893)	Ohio
Hahnemann Medical Coll and Hosp, Philadelphia	(1907)	Maryland
University of Pennsylvania	(1913)	Maryland
Meharry Medical College	(1904)	Missouri
Memphis Hospital Medical College	(1897)	Mississippi
Vanderbilt University	(1888) Kentucky, (1893) Indiana, (1900)	Kentucky
Baylor University	(1908)	Oklahoma
Fort Worth School of Medicine	(1906)	Oklahoma

LICENSED BY ORDER OF THE BOARD

Two graduates of the National School of Mexico were granted *reciprocity licenses by the order of the board* The years of graduation were not given

* No grade given

Michigan June Report

Dr B D Harison, secretary of the Michigan State Board of Registration in Medicine, reports the oral and written examination held at Ann Arbor, June 8-10, 1915 The total number of subjects examined in was 14, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 59, of whom 55 passed and 4 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent.
Rush Medical College	(1915)	88 8
Louisville Medical College	(1897)	75
University of Michigan Medical School	(1915)	79, 80 9, 81, 81 2, 81 5, 81 7, 82 1, 82 4, 82 8, 83 2, 83 2, 83 4, 83 6, 83 8, 83 9, 84 1, 84 9, 85 2, 85 2, 85 7, 85 8, 85 8, 85 8, 86 1, 86 6, 86 7, 86 9, 87, 87 1 87 4, 87 5, 87 6 88, 88 2 88 9 89 3, 89 5, 89 7 91 3
University of Michigan Homeo Med School	(1915)	75, 76 7, 80 2, 82, 82 6 83 5, 83 6, 84 8, 85 1, 85 1
Eclectic Medical College, Cincinnati	(1915)	82
University of Pennsylvania	(1915)	83 6, 91 7
University of Pittsburgh	(1915)	82 9

FAILED

College	Year Grad	Per Cent.
University of Michigan Medical School	(1915)	*
University of Michigan Homeo Med School	(1915)	*, *, *

* Conditioned in pathology, no grade given

Oregon July Report

Dr J L Hamilton, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 6-8, 1915 The total number of subjects examined in was 15, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 49, of whom 31 passed and 18 failed The following colleges were represented

PASSED

College	Year Grad	Total No Licensed
California Eclectic Medical College	(1914)	1
College of Physicians and Surgeons, San Francisco	(1915)	1
Bennett College of Eclectic Medicine and Surgery	(1884)	1
Chicago College of Medicine and Surgery	(1914)	1
Hahnemann Medical College and Hospital, Chicago	(1894)	1
Northwestern University	(1905) (1914)	2
Rush Medical College	(1911)	1
University of Louisville	(1913)	1
Baltimore Medical College	(1901)	1
University of Michigan, Homeo Medical School	(1913)	1
St Louis College of Physicians and Surgeons	(1915)	1
St Louis University	(1908)	1
University Medical College, Kansas City	(1910)	1
University of Oregon	(1915)	11
Hahnemann Medical Coll and Hosp, Philadelphia	(1915)	1
Jefferson Medical College	(1912, 2) (1913)	3
Woman's Medical College of Pennsylvania	(1909)	1
McGill University	(1914)	1

FAILED

College	Year Grad	Total No Licensed
College of Medical Evangelists	(1914)	1
College of Physicians and Surgeons, San Francisco	(1915)	1
George Washington University	(1907)	1
Bennett Medical College	(1913)	1
Chicago College of Medicine and Surgery	(1914)	1
Indiana University	(1909)	1
Louisville and Hospital Medical College	(1908)	1
St Louis College of Physicians and Surgeons	(1904) (1915)	2
St Louis University	(1905)	1
University of Oregon	(1908) (1910) (1915 4)	6
Willamette University	(1905) (1907)	2

Society Proceedings

COMING MEETINGS

American Association of Anatomists Chicago, Dec. 27 29
American Physiological Society, Boston Dec 27 30
Society of American Bacteriologists, Urbana, Ill, Dec 28 30

CHICAGO GYNECOLOGICAL SOCIETY

Stated Meeting held Nov 19 1915

Dr Channing W Barrett in the Chair

The Induction of Labor at Term

Dr Charles B Reed Can we determine whether or not the child has reached maturity thus fixing the time at which labor should occur? A child weighing more than 8 pounds is past maturity in 70 per cent of cases We accept seventeen weeks from conception as the day of quickening and forty-two weeks as the culmination of pregnancy Sometimes a week more is allowed, depending on the number of labors which the patient has had The work may be done under any aseptic environment, but the hospital is preferable Attention should be given to the bowels the night before, and in the morning the usual obstetric preparation of the genitalia should be made Under the strictest asepsis a Voorhees bag is introduced without rupture of the membranes, the patient being in the exaggerated lithotomy position Anesthesia is necessary only occasionally, even in primiparas If the os is not sufficiently patulous to admit the bag, it should be dilated. The bag is rolled up to a compact mass seized with a Pean forceps and passed into the uterus and filled with an ordinary hand syringe. If the pains do not start in an hour a weight of a pound or two is attached to the bag and hung over the foot of the bed Usually in from one to two hours the labor begins The bag remains for a variable period, rarely more than four hours, when it is expelled with strong pains Dilatation is practically complete The head follows the bag down, the membranes rupture and the second stage begins. From now on the case is managed according to general obstetric principles If the pains are weak and shallow, pituitary extract is given, if strong and regular, morphin and scopolamin, gas or chloroform may be used The first stage has been shortened and controlled The bag acts as a dynamic stimulant to the contractions as well as a mechanical aid to dilatation, and preserves the membranes from rupture until physiologic rupture occurs

It is believed that shortening the labor process and the preservation of maternal vitality make for immunity and prevent the infection that might follow a prolonged labor The second danger is the possibility of prematurity This happened once The case was not supervised, and an intern, supposed to be reliable, measured the uterus instead of the fetus The result was a seven months' child It has been urged as an objection to the bag that it frequently changes the location of the presenting part This occurred two or three times, but was not unfavorable.

In a series of 100 cases the results were as follows primiparas, 35, multiparas, 65, average duration of labor, seven and three-quarters hours, shortest labor fifty-five minutes, longest, thirty hours in a primipara with a hard, cartilaginous cervix, and twenty-eight hours in a multipara with cicatricial tissue in the cervix. The bag broke six times and was reinserted three times, the average time for expulsion of the bag was three hours and twenty minutes, membranes ruptured by bag, eleven, maternal deaths, two, one from placenta praevia and one from pneumonia eight days after labor, average weight of children 7 pounds, 7 ounces, smallest, 5 pounds, heaviest, 10 pounds, 5 ounces, seven babies died one a child of a primipara after a spontaneous labor of sixteen and a half hours, a baby born in asphyxia pallida, and revived with difficulty, died eight hours later, second, of a multipara, labor eleven and a half hours, blue baby, revived, and died suddenly thirty-six hours later, third and fourth children, compression of cord at outlet, one syphilitic, fifth and sixth children, moderately contracted pelvis in a primipara, one occipital posterior position stillborn This is the only case attributable to the method

Complications Version and expression, 3, breech, 4, placenta praevia 2, and collapse of the arm, 1, moderately contracted pelvis, external conjugate 8 cm, 6, stenosis, 1, motor insufficiency, 1, lacerations, 17, grave albuminuria, 1, forceps, axis traction, 2, low forceps for occipital posterior, 9, deep transverse arrest, 8, insufficiency of power, 4, total, 23 Elevation of temperature, 7

DISCUSSION

Dr J Clarence Webster The induction of labor at a calculated date is not new I should like to emphasize that there is no means of calculating the exact age of the fetus in utero, because no one yet knows when conception begins There is always a period of uncertainty of one or two or three weeks, consequently the determination of the time of maturity is guesswork to a considerable extent even in the hands of the expert A 4½ or 5 pound child may be just as well developed as one weighing 7 or 8 pounds and the measurements will be different One good object that can be gained by this procedure is the prevention of an extension beyond term, which is so bad for many mothers and children I employed a similar technic for many years, but in later years I have abandoned forceps and have used the fingers In primiparas I always dilate the vagina with the cone-shaped hand covered with a rubber glove, and I then study the condition of the cervix In the great majority of primiparas or multiparas one can dilate the cervix with the finger I have seen a very bad tear caused by the use of the vulsella on the cervix in this process, and I rarely use them Cases with rigid cervix I do not consider fit for the bag at all I think one of Dr Reed's long labors was a typical case of rigid cervix. That is a case for a vaginal or abdominal cesarean section, but not for dilatation In reference to the shortness of the labor, for sixteen years I have generally introduced the bag in the forenoon In the great majority of cases the labors have not come off until late in the evening, toward midnight, or the next morning I think a very small percentage of labors have come off within six hours In the great majority of these cases no weight was attached to the bag The attachment of a weight has advantages, if one wishes to insure the stimulation of the uterus and the early development of good pains One point that Dr Reed did not mention is that in those cases of first stage slight pains that keep the woman in uncertainty and misery and spoil sleep for a long number of hours, the introduction of a Voorhees bag is one of the very best clinical measures that can be adopted to shorten this period and bring about dilatation.

Dr. Charles E. Paddock If Dr Reed intends this as an instruction to us to deliver every case at term or as near term as we can judge the case, then we are meddling somewhat with obstetric practice In the attempt to carry out this line of treatment we will have many failures I cannot find the cervix dilated or dilated sufficiently in every primipara to admit a bag in the manner described I cannot do it without at first dilating at least one third of the primiparas that come to me, and without putting the majority of them under an anesthetic to do it In about nine tenths of the cases in which I have seen the woman throughout pregnancy I know when she is at term and I advise that she go to the hospital and have the pregnancy interrupted, provided the cervix is in such shape that it can be done without any great traumatism to the mother or danger to the child But to send out such a teaching to the world as the treatment to pursue I do not believe is right

Dr. Rudolph W Holmes I have been hearing rumors of Dr Reed s method, and I have been very skeptical about it I could not believe it possible that any one would want to induce labor in every case. People may consent to the procedure, and if there is failure there will be intense criticism, deep prejudice will be aroused, and great hardship will be worked to physicians I think it is ill advised to make it a leading practice in obstetrics I am convinced that a woman postmature is as rare as flies on the north pole Dr Reed has made the mistake of delivering a seven months' baby, and I know of a cesarean section that was done here at seven months I have used the bag in 100 cases In one case of placenta praevia I had the placenta out and the uterus tamponed in ten minutes In another case I had the bag in five days and then had to secure delivery by cutting Each bag would work for a time and then the cervix would go back. The bag does not secure sufficient dilatation—only a little more than half To put in a large bag is a great volume to put into the uterus, and it will dislodge the head When the bag comes out, the head, if favorably placed, will slip back into place. But they are dislodged, and the fact that Dr Reed had several occipitoposterior positions is suggestive. If he follows up his experience, I believe he is going to be convinced that the bag dislodges the head, and when it slips back into the pelvis it will take an abnormal position

Dr. Rachel Yarros We have been trained to leave our obstetric patients alone, or to meddle with them as little as possible In abnormal cases the bag does not work so remarkably as in Dr Reed's cases I have never had a case in a primipara in which the bag worked as successfully, and especially a small bag It is expelled before there is time for the membranes to rupture or for the baby to be delivered

Dr. N S Heaney Any method of shortening the first stage of labor without danger to the mother or child is desirable We have not used traction in connection with the bag according to the method of Dr Reed, except in placenta praevia, and then just enough weight to stop the hemorrhage Lately I have been using traction in a larger percentage of cases by means of rubber tubing from a fountain syringe

Dr. Frank Carey I am inclined to let my patients get into labor before I undertake to do anything I have not been able to tell when a patient is at full term, and until I can do that I shall hardly be inclined to resort to artificial means until the patient is in labor

Dr. R T Gillmore I have watched Dr Reed for some time, and I confess that it has taught me to fear the bringing on of labor less than before I was familiar with it I am inclined to believe Dr Reed's theory of the patient not being tired out and not having the exhaustion of the nervous elements is an important factor both in the patient's recovery and in the prevention of sepsis I am going to try it oftener in hospital cases, in which asepsis is perfect and I have better control

Dr. Carey Culbertson For some months I have used the method in my private cases, pathologic and clinical, at what we call "term" I think all obstetricians will agree that it does not make very much difference, as far as recovery goes, whether a baby is born at 280, 285 or 290 days, or throughout a fourteen-day period I have been inducing labor after the 280th day, choosing the day when the patient expressed the desire to have the baby The first stage has been shortened and the entire labor is confined to forty-eight hours, whether the patient is a primipara or a multipara The second stage is not materially altered, because the bag is out. As far as the displacement of the head is concerned, in multiparas that is not an important factor, because in the average multipara the head is not in the pelvis I find as a rule that the head returns to the pelvis when the bag is out of the cervix in the vagina There are occasional cases in which labor is not induced, in which it cannot be induced by any artificial means and the patient must be delivered surgically, but that does not happen oftener than once in twelve or fifteen times I think we are using a larger bag than Dr Reed I have never found it necessary to put the bag in three or four or five times I should not do it, especially every day I should allow two or three days to intervene As a rule, I do not find it necessary to employ traction, but when I do I use the elastic tube. It is important not to make too much traction, and the bag can be too tight in the cervix. A little tension is all that is required I usually expect contractions to occur immediately after the introduction of the bag When the bag has been in all night or all day and pains do not come on, I think it best to take the bag out It certainly should not be left in twenty-four hours

Dr Mark T Goldstine The impression is that the technic of this is simple I have just the opposite impression I do not think the introduction of the bag and the management of the case afterward is always as simple as one would be inclined to believe from what has been said here I would not say that the introduction of the bag is difficult, but the asepsis and carefulness required after the bag is introduced are far from simple, and it requires either the man himself to watch his patient or some one who has had a great deal of experience Dr Reed's success I attribute as much to the lack of intravaginal manipulation as to the short labor In the great majority of cases the only intravaginal manipulation done would be the introduction of the bag No other vaginal examinations are made I think that has some bearing on his lack of morbidity The work will impress a great many men I should like to see the same procedure tried in a series of normal cases, leaving out the abnormal ones

Dr Charles B Reed It makes little difference whether the child comes two weeks before full term or not, it does make a difference whether the child is delivered two weeks after the expected time Dr Paddock made use of the term "meddlesome obstetrics" I suppose it is I used to hear the term applied to surgery when some one was going to open an appendiceal abscess The point is, Are we going to control the situation from the beginning, or shirk responsibility? If we are going to be men we will take the responsibility and take what blame comes to us and not claim to be obstetricians As to the introductoin of the bag, Dr Paddock and others manifested an unwillingness to do it without an anesthetic My associates at the hospital see one bag introduced, and after that they introduce it themselves My interns will put in the bag without an anesthetic and without any difficulty whatever, provided they have the manual dexterity Deliver at the time set, in as short a time as possible, and make it as nearly painless as possible The small bag has been chosen purposely We have experimented with large sized bags We have selected the small bag deliberately because we do not want to get complete dilatation We inaugurate labor and let Nature complete it Formerly when the bag came out the pains might cease, but now we have pituitary extract, the labor continues and the woman is delivered The babies do not suffer and the women do not suffer more than a few hours The technic is important, and I am free to say that the cases do require an unusual amount of attention.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Medical Sciences, Philadelphia

December, CL No 6, pp 781 936

1 *Complement Fixation in Diagnosis of Pulmonary Tuberculosis C F Craig, U S Army
2 *Landry's Paralysis, Report of Case with Necropsy and Histopathologic Findings E D Fisher, New York
3 Value of Symptomatic Drug Treatment J L Miller, Chicago
4 Problems of Nephritis from Clinical Standpoint. A R. Elliott, Chicago
5 Chronic Interstitial Nephritis and Arteriosclerosis O Klotz, Pittsburgh
6 Certain Syphilitic Affections of Heart and Aorta J M Anders, Philadelphia
7 *Heart Cases Showing Vagus Influence M H Sicard and F S Meara, New York
8 "Sugar" Content of Spinal Fluid in Meningitis and Other Diseases. A H Hopkins Philadelphia
9 *Tubercle Bacilli not Stainable by Ziehl, Their Clinical Significance C N Meader, Denver
10 *Hodgkin's Disease, Study of Twenty Five Cases W F Cunningham, New York.
11 Citrate Method of Blood Transfusion in Children R Lewisohn, New York.

1 **Complement Fixation in Tuberculosis**—Craig believes that in this method we possess a valuable aid in the diagnosis of active tuberculous infection and a guide as to the results of therapeutic measures The general technic of the complement fixation test for tuberculosis experimented with is that employed in making the Wassermann test. The

antigen employed consists of an extract of several strains of the human tubercle bacillus A human hemolytic system was employed As complement guinea-pig blood serum was used, Craig tested the blood of 166 patients suffering from pulmonary tuberculosis In addition, the blood of 150 syphilitic as well as of 100 patients suffering from other diseases was tested, and also 150 normal individuals who were used as controls Of the 142 cases of pulmonary tuberculosis that reacted to the test, 119 gave a double-plus reaction and 23 a plus reaction, of the 103 cases of active infection reacting, 87 gave a double-plus reaction and 16 a plus reaction, while of the 39 inactive cases of infection, 32 gave a double-plus reaction and 7 a plus reaction Of 150 syphilitics tested, all giving a positive Wassermann, not one gave a positive reaction with the antigen employed in the complement fixation test for tuberculosis Of the patients suffering from other diseases, 100 in number, all gave a negative reaction The blood serum of 150 individuals in good health and free from tuberculous infection was tested and a negative result was obtained in every instance The results of the test also demonstrate that while a patient may have a clinically inactive tuberculous infection, the blood often gives a positive complement fixation reaction, and this fact, Craig says, should prove of considerable value in the control of the treatment of the disease

2 Abstracted in The Journal, June 12, p 2013

7 **Heart Cases Showing Vagus Influence**—One of the cases cited by Sicard and Meara, a case of simple increased frequency of the heart's action, was controlled and slowed by compression of the right vagus governing the sinus node, the slowed impulses from which were transmitted through junctional tissue to the ventricles, maintaining normal rhythm, this is what one would expect The other case, one of tachycardia of auricular origin, was slowed by compression of the left vagus

9 **Tubercle Bacilli Not Stainable by Ziehl.**—In any patient suspected of tuberculosis in whom Ziehl forms cannot be demonstrated, Meader says, it is as important to search for Gram-staining forms as it was for the Ziehl-staining bacilli, and a diagnosis of tuberculosis cannot be certainly excluded until such search has proved negative The type of case in which they are characteristically present strongly supports the conception that they represent a resistance stage of low virulence, and their presence alone warrants a much more favorable prognosis than does the presence of Ziehl forms. Further, they are probably a definite factor of as yet undetermined importance in the spread of tuberculosis

10 **Hodgkin's Disease**—According to Cunningham, the treatment of Hodgkin's disease is excision of all foci of infection and Roentgen rays Vaccines are of no value For diagnosis in lymphatic disturbances, more than one gland should be obtained The following evidence is given to support it as an infection, bacterial or protozoan in origin (a) the histology is that of an inflammatory reaction, (b) injections of gland emulsions have caused temporary lymphatic enlargement in lower animals (literature), (c) the fever resembles closely that of other infections, (d) the leukocytosis, (e) the exudate when serous surfaces are involved. The specific organism has not been isolated

American Journal of Physiology, Baltimore

December XXXIX No 2 pp 131 238

12 *Effect of Chloroform on Factors of Coagulation. G R. Minot, Boston.
13 Peristalsis and Coordination in Earthworm. W E Garrey and A. R. Moore.
14 *Cardio Inhibitory Center F R. Miller and J T Bowman London Canada
15 Effects of Aqueous Extracts of Organs on Contractions of Unstriated Muscle Fibers. G G Fawcett, J M Rahe G S Hackett and J Rogers New York.
16 Feeding of Young Chicks on Grain Mixtures of High and Low Lysin Content. G D Buckner, E. H Nollau and J H Kastle Louisville, Ky
17 Electrical Studies in Mammalian Reflexes. Correlation Between Strength of Stimuli and Direct and Reflex Nerve Response. A. Forbes and A. Gregg, Boston
18 *Evidence of Vasotonic and Vasoreflex Mechanism. W T Porter and A. H. Turner Boston.

12 **Effect of Chloroform on Factors of Coagulation**—In his experimental work Minot found that antithrombin is rendered inactive by chloroform and ether, thus allowing free thrombin if present in an oxalated plasma to clot fibrinogen Prothrombin is not converted to thrombin by chloroform Chloroform can precipitate both fibrinogen and prothrombin from an oxalated plasm Chloroform does not weaken the action of a solution of pure thrombin Ether does slightly Antithrombin could not be recovered from chloroform or ether extracts of serum or plasma, unheated or heated to 60 C, and is not exactly identical to antitrypsin or to Doyon's antithrombin In one chloroform poisoned rabbit the antithrombin of the blood was decreased below normal

14 **Cardio-Inhibitory Center**—The results of the experiments made by Miller and Bowman show that the cardio-inhibitory center is situated in the dorsal vagus nucleus and are thus in harmony with the histologic investigations of Kohnstamm and of van Gehuchten and Molhant

18 **Vasotonic and Vasoreflex Mechanism.**—The method employed by Porter and Turner consisted in applying curare to the vasomotor center hitherto believed to control both the vasotonic and the vasoreflex function Curare left the tonus unchanged, while the depressor and the sciatic vasomotor reflexes were more than doubled Curare thus separated the vasoreflex from the vasotonic function Certain doses of alcohol leave the tonus unchanged while completely suspending the vasomotor reflexes Neither phenomenon would be possible if the vasotonic and the vasoreflex mechanism were identical

Southern Medical Journal, Birmingham, Ala.

December VIII No 12 pp 1019 1122

19 *Abscess of Liver J B Elliott, Jr, New Orleans.
20 Renal Infections, with Special Reference to Distant Foci C M Nice, Birmingham
21 Detection and Diagnosis of Gallstones by Roentgen Ray G M Niles Atlanta, Ga
22 Disease—Neglected Factor in History J W Fries Winston Salem, N C
23 *Test of Diet in Prevention of Pellagra. J Goldberger, C H Waring and D G Willets Washington, D C
24 *Treatment of Pellagra by Diet. D G Willets, Washington D C.
25 Sanitation of Vera Cruz, Mexico, During American Occupation W D Wrightson Washington D C
26 Full Time Health Officer Work in Walker County (Ala) C. A Grote Jasper
27 Local Anesthesia Laparotomy for Forty Three Pound Multilocular Ovarian Cyst in Patient Seventeen Years of Age H. P Cole Mobile.
28 Importance of Faucial Tonsil as Portal of Entry in Tuberculous Cervical Adenitis Twenty Nine Cases. B C. Willis Richmond Va.
29 Vocal Strain from Laryngologist's Standpoint Its Causes and Prevention. W A. Wells, Washington, D C

19 **Abscess of Liver**—While the ameba histolytica was found by Elliott in only 21.5 per cent of 116 cases, he believes that more correct methods of investigation would show it to be the primal cause in at least 80 per cent of the cases The most constant symptoms are pain in region of the liver, loss of weight and increased leukocyte count The aspirating needle used for exploration should be at least 5 inches in length Exploratory laparotomy is justifiable in doubtful cases Emetin should be used in all cases of hepatic abscess as a regular postoperative measure Elliott urges that all recurring diarrhea in the South should be studied carefully He is of the belief that many of these cases are amebic in origin

23 and 24 Abstracted in The Journal, December 11, p 2114

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

November XX No 6 pp 175 208

1 *New Therapeutic Roentgen Ray Localizer R. Knox and A. St. George Caulfeild
2 Photographic Action of Radio-Active Sources. W Makower

3 Fluorescent Screen Localization by Parallax Method A C Jordan
4 *Roentgenograms to Illustrate Velocity of Rifle Bullet as Determining Factor in Extent of Injury G Vilvandre.

1 **New Therapeutic Roentgen Ray Localizer**—The principle employed by Knox and Caulfeild is that of the rotating tube, making a circle on the surface and focusing the sheaf of rays on a point in the interior whose depth is determined by the angle at which the tube box is fixed The chief field of action for the centering device is in the treatment of malignant disease It will be possible to attack a growth from all aspects and the maximum dose to be administered at will to selected areas of the growth

4 **Roentgenograms to Illustrate Velocity of Rifle Bullet**—The series of cases reported by Vilvandre illustrates the point that the damage done by rifle bullets is dependent on the velocity of the missile rather than on the texture of the bone

British Medical Journal, London

November 20, II, No 2864 pp 737 768

5 Clinical Aspects of Typhus P C T Davy and A J Brown
6 Recrudescence of Local Sepsis in Completely Healed Wounds R H J Swan and K Goadby
7 Treatment of Wounds in War J Tissot
8 Tartar Emetic in Kala Azar P Mackie
9 Bilharziosis in Natal F G Cawston
10 Auscultation of Heart of Recruit J K Fowler

Journal of Tropical Medicine and Hygiene, London

November 15, XVIII, No 22, pp 253 264

11 *Notes on Certain Insecticides A Castellani and T W Jackson
12 *Inoculation of Smallpox as Prophylactic Measure as Practiced by Natives at Djen in Nigeria H A Foy
13 Schistosomiasis in Natal F G Cawston
14 Case of Oriental Sore Treated by Antimonium Tartaratum (Tartar Emetic) Locally G C Low

11 **Insecticides**—In regard to solid and liquid insecticides, the substances which Castellani and Jackson have found to be deleterious to body-lice are, in the order of their efficiency Kerosene oil, petrolatum, guaiacol, anise preparations, iodoform, compound solution of cresol and similar preparations, phenol solution, naphthalene, camphor Pyrethrum has a feeble action on lice, while boric acid, sulphur, mercuric chlorid and zinc sulphate, when used in powder form, have apparently no action whatever As regards bedbugs, kerosene oil is the best insecticide Next to it comes guaiacol, one of the most active drugs of those the authors have tried

Substances which are powerful licecides may have little or no action on bedbugs, and vice versa For instance, iodoform, which kills lice within ten to fifteen minutes, has practically no deleterious action on bedbugs, which may live for more than twenty-four hours when exposed to it It has also little effect on fleas Pyrethrum, on the other hand, has a much more powerful action on bedbugs than on lice

For use against lice on a large scale, as among troops and prisoners, perhaps the best insecticide powder is naphthalene This substance has a lower licecide action than kerosene oil, guaiacol, iodoform and anise preparations, but it has a less displeasing odor than the first three named In stored blankets and clothing it is also practicable and of use,
are found on the clothing and blankets
returns to the pelvis summer Naphthalene is useful also for
vagina There are ot rent action on moths Castellani and
induced, in which it can here of insecticide powders As
and the patient must be du es, the American Red Cross Sani-
happen oftener than once in iction to kerosene by its daily use
we are using a larger bag tha For the better class of patients
it necessary to put the bag in - is to be preferred to naphtha-
should not do it, especially ever or is not displeasing, while it
three days to intervene As a ru dition to lice and fleas Such
to employ traction, but when I do immer in hot countries, as
is important not to make too much in and often prevents a
be too tight in the cervix. A little
required I usually expect contractions
after the introduction of the bag When points of interest in
all night or all day and pains do not come ulation 80 per cent
to take the bag out It certainly should not with the virus of
four hours developed a local
ar as adults and

children go being fairly equal (b) Of those inoculated, 43 3 per cent (mixed population) developed smallpox, adults 30 9 per cent and children 48 7 per cent (c) Fifty-three per cent of those that showed a local reaction at seat of inoculation developed smallpox (d) Adults 38 8 per cent (male and female) and 48 7 per cent. children out of (c) developed smallpox (e) Both from (b) and (d) the figures show a much higher degree of susceptibility of children as compared with adults when inoculated with the disease (f) The mortality in twenty-six cases that developed the disease out of sixty inoculated was nil, mortality, however, occurred among other inoculated cases, but it was not possible to get definite figures of mortality relative to the number inoculated and to the number that developed a local reaction (g) Incubation period of infection naturally acquired is eleven days In three inoculated cases the eruption appeared on the ninth day after inoculation, so that the disease began on the seventh day and incubation period is shortened as a result of inoculation (h) Nature of attack resulting from inoculation Of the twenty-six cases that developed smallpox, six were badly marked, showing a fairly acute attack of discrete smallpox, the remaining twenty had slight marking as an indication of a mild attack

Annales de Médecine, Paris

July II, No 4 pp 315-440

15 Paratyphoid Fevers C Achard
16 Traumatism as a Factor in Pleuro Pulmonary Tuberculosis. G Brouardel and L. Giroux
17 *Cholera, One Hundred Cases G Delamare
18 Blue Staining Granules in the Mononuclears in Normal and in Leukemic Blood (Les granulations azurophiles des mono nucleaires) C Aubertin and H Chabanier
19 *The Cardio Peritoneal Syndromes in Typhoid Fever L Bernard and J Paraf

17 **Cholera**—Delamare's study is based on 100 cases of which he had charge in Constantinople in 1912 These patients were nearly all otherwise healthy, there was a history of malaria in only ten The general mortality during the epidemic was 47 per cent, but in his cases it was only 30 per cent His main reliance was on baths, and heat applied to the feet and hands, with saline infusion and heart tonics Yoghurt and rice were the main diet during convalescence, and there were no gastro-intestinal after-effects

19 **The Heart and Peritoneum in Typhoid Fever**—Bernard and Paraf call attention to the symptoms of weakness on the part of the heart and of irritation of the peritoneum before there is actual peritonitis With both the cardiac asthenia and the preperitonitic syndrome, we have meteorism, small, rapid pulse and cyanosis or pallor of the face or the leaden tint of peritonitis, but the heart sounds reveal the weakening of the heart action, while the muscular defense in the abdominal wall calls attention to the trouble below, thus differentiating the two syndromes When the two are associated death generally ensues, even without actual development of peritonitis or true heart collapse They describe some typical cases in which the cardiac or the peritoneal syndrome preceded the other The measures required for one are contraindicated by the other In the preperitonitic stage prompt operative treatment may be the only means to ward off the impending peritonitis In their one case of recovery they varied the treatment according to which syndrome predominated at the moment, changing from baths to ice or heart tonics as the indications varied

Archives des Maladies du Cœur, etc, Paris

November, VIII, No 11, pp 361 436

20 *Nature and Cause of Accidents from Resorption in Edema H Vaquez.
21 *Typhoid Appearing as a Hemorrhagic Syndrome J Milhit and H Chabanier

20 **Disturbances from Absorption in Edema**—Vaquez refers to the dizziness, headache, dyspnea, general weakness and other symptoms sometimes noted when edematous fluid is being absorbed, be the fluid has been thrown off by the kidneys or evacuated otherwise Swelling of the joints, cramps in the calf of the leg, somnolency, stupor or insomnia with agitation, vomiting or convulsions, may also be encoun-

tered, but they subside as a rule as soon as ample diuresis is established In one of his cases the congestion of the face was so intense that some of the capillaries seemed to have ruptured Andral and Kostkevitch have each reported negative necropsy findings in a case of fatal accidents from this cause Vaquez reviews the data on the subject and agrees with those who regard the disturbances as analogous to serum sickness As the dropsical accumulations become mobilized and are taken up into the blood they induce actual anaphylaxis The phenomena of this auto-anaphylaxis also include the dropping of the arterial blood pressure and considerable but transient albuminuria

The third criterion of the "anaphylactic shock"—leukopenia—has not been sought for systematically to date, but de Jong and Bezançon reported a leukopenia like that of anaphylactic shock in a case in which part of a pleural effusion was siphoned out, but quite a quantity still left Vaquez noted in one case a marked drop in arterial tension after diuresis amounting to 18 liters When the edema fluid is drained away through the skin, there is no chance for the conflict between the albuminoids in the fluid and the colloids in the blood, which causes the phenomena The latter are more frequent in the elderly because their kidneys are less able to cope with the task of eliminating the mobilized fluids The anaphylactic phenomena are of course most liable to occur and most pronounced during the period between the mobilization of the dropsical accumulations and the liberating diuresis Analysis of the phenomena reveals that they are essentially the same as those induced by Richet in his experimental research on anaphylaxis and those recorded by Widal in clinical paroxysmal hemoglobinuria

21 Hemorrhagic Onset of Typhoid—The patient was a young man who complained of headache and pain in the lumbar region and the next day he voided red urine This suggested scarlet fever and he was sent to the isolation hospital, but the absence of sore throat and eruption, and a history of scarlet fever in childhood finally excluded this disease. The intestines liver and lungs seemed to be normal but the agglutination test finally pointed to typhoid Hemorrhagic vesicles developed on the body with epistaxis, and spitting of blood, till death the twenty-fourth day

Beiträge zur Klinik der Tuberkulose, Würzburg

XXXIII No 2 pp 111 220 Last indexed Jan 30 1915 p 472

22 Therapeutic Induced Pneumothorax in Pulmonary Tuberculosis W Zinn and H Geppert

23 Serologic Tests to Distinguish Between Tuberculous Bronchial Glands and Pulmonary Tuberculosis. (Versuch zur Abgrenzung der reinen Bronchialdrusentuberkulose von der Lungentuberkulose mit Hilfe der Abderhaldenschen Abwehrfermente.) F Oeri

24 Lime in Treatment of Tuberculous Bronchial Glands (Einige rontgenologische und klinische Beobachtungen bei Kalkbehandlung der Bronchialdrusentuberkulose.) A. Wersen

June No 3 pp 221 266

25 Spread of Tuberculosis in the Male Genital System (Ueber die Ausbreitung der Tuberkulose im mannlichen Genitalsystem) C Kraemer

July No 4 pp 267 412

26 Pulmonary Tuberculosis and New Dualistic Bases for Actually Specific Treatment. H Kronberger

Mitteilungen a. d Grenzgeb der Med. und Chir, Jena

XXVIII No 5 pp 749 900 Last indexed Aug 21 p 749

27 *Typhoid from Surgical Standpoint (Chirurgisches uber Typhus schwierigere Falle.) B Riedel.

28 *Dissolved Albumin in Stomach Content as Sign of Cancer (Die diagnostiche Bedeutung der Eiweissbestimmung im Mageninhalt nach Salomon.) H Zoeppritz.

29 Importance of the Functioning of the Antrum Pylori in Prevention and Treatment of Postoperative Peptic Ulcer (Bedeutung der Funktion des Antrum pylori fur die Magenchirurgie.) H Schur and S Plaschkes

30 Influencing of Leukocyte Picture by Iodin. (Ueber die Beinflussung des weissen Blutbildes durch Jod) J Bauer

31 Gunshot and Shell Wounds of the Chest. (Ueber Chylopneumothorax durch Schussverletzung nebst Bemerkungen uber Lungenschusse.) J Frohmann.

32 Roentgenoscopy of Motor Function of Diseased Stomach. (Zur Radiologie der Bewegungsvorgange am kranken Magen.) H Fischer

33 *Transient Glucosuria with Fractures (Glykosurie und Diabetes bei chirurgischen Erkrankungen I) G E Konjetzny and W Weiland

34 Inhibiting Action of Malachite Green and Kristallviolett on Experimental Septicemia in Guinea Pigs (Wirkung einiger Anilinfarbstoffe auf experimentell erzeugte Septikamie bei Tieren) G Hofer

27 Surgical Aspects of Typhoid Complications—Riedel analyzes here his experiences with forty operative typhoid cases mostly tardy complications He remarks that the number of such complications is probably larger than has been suspected hitherto, as the connection with typhoid years before has often been overlooked Complications in soft parts are particularly dangerous, especially peritonitis from diapedesis Typhoid appendicitis is controlled comparatively easily, and typhoid cholecystitis still more readily Bone tissue is vitally less important than soft part tissues, and has unlimited capacity for regeneration Hence typhoid foci in bones are not much to be feared unless they are located at particularly unfavorable points Typhoid foci in joints heal favorably if operated on at the proper time One boy of 14 seven months after appendicectomy, suddenly developed symptoms of peritonitis ascribed to the stump of the appendix Laparotomy the third day confirmed the diffuse peritonitis, but no cause for it could be detected until necropsy next day revealed flat typhoid ulcers in the intestines, the serosa above absolutely intact This case suggests that a symptomless typhoid may be responsible for many cases of so-called spontaneous peritonitis In one case he mistook ordinary swollen glands back of the apparently sound appendix for typhoid appendicitis, and Thomas and Frazier have reported eight cases of typhoid suppuration in mesenteric glands

Another patient was a man of 35 with multiple posttyphoid fistulas near the anus beyond operative repair One woman with senile paranoia at 57 had peritonitis from diapedesis and typhoid was assumed The intestines were found sound but typhoid bacilli were cultivated from the gallbladder One patient with purulent typhoid thrombophlebitis of the internal saphenous vein was saved by its extirpation Thrombosis followed in the external saphenous vein but no suppuration In another case thrombosis in the femoral vein in the course of typhoid was followed four years later by thrombophlebitis in the external saphenous and the fever persisted for weeks after extirpation of the vein

The costal cartilages were the seat of the skeletal typhoid process in eleven of twenty-three cases, and the tibia in six The process healed smoothly, as a rule, after resection The most serious were typhoid foci in the costal arch He had five such cases, and remarks that one can be extravagant in resecting under these conditions as repair proceeds promptly and thoroughly when there is no infection In infected cases the operation has to be frightfully radical, and the perichondrium grows only bone, not cartilage In his joint cases, the interval since the typhoid was twelve years in the case of a man of 44 who had had an osteomyelitic process in the hip joint for a year It healed after resection Puncture of the hip joint in another case, in a boy of 16, brought typhoid bacilli, and recovery was soon complete under drainage alone In two other cases the knee or hip joint developed deforming arthritis after the typhoid joint trouble

28 Dissolved Albumin in Stomach Content as Sign of Cancer—Zoeppritz points out that the presence of dissolved albumin in the fasting stomach does not decide between ulcerative and nonulcerative processes, but the absence of albumin renders the assumption of malignant disease highly improbable Stagnation of stomach contents and lack of the normal acid favor the appearance of albumin in the stomach washings but do not influence its production Albumin may sometimes be found in the clinically normal stomach, but it occurs more frequently with chronic gastric trouble His tabulated records of forty-eight operative cases of gastric cancer showed a positive response to the Esbach test in all but 8 cases, and there was no free acid in 7 in this group and very little in the remaining case His tables show further a positive reaction in 14 of 21 operative cases of gastric ulcer and in 5 of 6 without an operation, also in 5 of 6 operative cases of chronic gastritis and in 8 of 8 nonoperative cases, in 4 of 7 other operative stomach affections and in 5 of 5 nonoperative, in 14 of 16 operative abdominal affections and in 12 of 12 in which no operation was attempted In one case an extensive cancer in the submucosa had irritated the mucosa and caused secretion of mucin and nuclein, which gave the positive albumin reaction, although there was scarcely any ulceration and this was close to the gaping pylorus The various groups are tabulated in detail and the reaction compared to other tests for cancer In 135 cases of gastric cancer at Kiel occult or visible blood was found in 95 per cent, there was emaciation in 90 per cent, anacidity in 89, dissolved albumin in 83, lactic acid in 67, long bacilli in 64 and a palpable tumor also in 64 per cent The albumin reaction was positive, if at all, very soon after the first symptoms appeared The test for albumin is simple and easy if the stomach motor function is normal, but with impaired evacuation it is a tedious matter to rinse the stomach clean, and the slightest erosion of the stomach walls nullifies the findings of the test

33 **Transient Glucosuria with Fractures**—Konjetzny and Weiland report from the surgical clinic at Kiel 34 cases of fracture in which there were no traces of traumatic glucosuria, 3 in which the examination on account of the accident revealed hitherto unsuspected diabetes, and 24 of alimentary glucosuria after fracture of the leg or arm The sugar content of the blood was recorded in 36 cases and found abnormally high in 31 Of the total 83 fracture cases there was no tendency to glucosuria in 48 1 per cent, while in 40 9 per cent there was actual traumatic glucosuria, and in 7 2 per cent alimentary glucosuria The traumatic glucosuria is transient and there is no polyuria or polydipsia, but it is accompanied by hyperglycemia They regard it as a transient central lesion, like the sugar puncture, it may be in the nature of fat embolism

Policlinico, Rome

November 7, XXII No 45, pp 1505 1536

35 Hydatidiform Mole in Mother and Daughter (Mola vescicolare in parto bigemino teratologico) E Iraci
36 Scarlet Fever P Timpano

November 14, No 46, pp 1537 1568

37 *Hemoglobinuria from Beans (Il favismo) A. Gasbarrini
38 Workmen's Compensation and Safety Appliances. (La profilassi degli infortuni e gli interessi degli operai) G Dragotti
39 Subcutaneous Nodules in Acute Articular Rheumatism P Ercolani

37 **Hemolytic Jaundice from Beans**—Favism, from *fava*, "bean," is the name given in Italy to an acute febrile anemia with jaundice and hemoglobinuria which is not uncommon there, and is ascribed to the eating of fresh, raw or dried and cooked beans or smelling the blossoms of bean plants Gasbarrini accepts it as a morbid entity, the result of acute toxic hemolysis It was mentioned by Herodotus and by numerous Italian writers in the last century, but Fermi (1905) was the first to apply experimental research in the study of favism His conclusions favored the assumption of acute toxic action of beans in the predisposed In the very young it is liable to prove rapidly fatal It is known only where beans are cultivated on an extensive scale, occurs usually in the spring, and Fermi noticed a hereditary character in 20 per cent of his cases, sometimes through several generations The inherited predisposition may not become manifest till adult life Infants and the elderly generally escape Quinin has been excluded as a factor by six Italian physicians who have made a special study of this question The Wassermann reaction has always been found negative in favism, and the history of the frequent cases also excludes syphilis as a factor Fermi has reported that in 1,211 cases in Sardinia, 752 were ascribed to ingestion of beans and the others to inhalation of the odor or pollen Tomaselli has reported cases in which the disturbances occurred immediately after passing through a field of beans in flower Montano had one patient affected anew whenever he inhaled the odor of bean blossoms or passed near a pile of fresh beans Nurslings can also be affected when the predisposed mother eats beans The affection does not seem to be contagious and there is no period of incubation, the disturbances coming on at latest in a day or so after ingestion of the beans or in from two to six hours after inhalation Acute fever, black urine, intense anemia and jaundice distinguish favism and there may be a rigor, vomiting and diarrhea No one has been able to isolate from beans any toxic substance that might be responsible for this toxic hemolysis, some believe that a fungus on the beans is responsible for the symptoms Others accept a bacterial origin, but no evidence has been presented to sustain this assumption There does not seem to be any idiosyncrasy to quinin in persons affected with or predisposed to favism With paroxysmal hemoglobinuria there is not the extreme prostration characteristic of favism, but there is a close resemblance between the latter and Plehn's hemoglobinuric icterus in all its forms, from the abortive and mild to the grave, the fulminating and the hemorrhagic Even the blood picture seems to be identical Echinococcus disease of the liver is liable to be mistaken for favism or vice versa, as both are prevalent in the same regions The cadaver of one child with acute favism showed merely changes indicating some old liver and spleen trouble of obscure cause This is the only complete necropsy on record As soon as the hemoglobinuria is past, recovery proceeds rapidly Some of the predisposed suffer whenever they are exposed to the assumed cause, in others, one attack seems to confer immunity for years or permanently In Fermi's statistics the mortality was 8 per cent It is highest in children and the disease seems to be especially grave in certain seasons Treatment can be only symptomatic Injections of horse serum and of cholesterin and calcium chlorid by the mouth have been tried but without decisive results

Hygiea, Stockholm

LXXVII, No 20, pp 1185 1264

40 *Abuse of Tobacco from the Medical Standpoint (Om tobaksmissbruket från medicinsk synpunkt) C F Höckert

40 **Abuse of Tobacco from the Medical Standpoint.**—This issue of *Hygiea* has an unusually good portrait of Ehrlich, with a ten-page tribute to his work The usual comment on the picture, however, is that Ehrlich is shown without his inevitable cigar, and it is a curious coincidence that the rest of the number is devoted to the "Abuse of Tobacco" Its use and abuse are discussed from the historical and geographical as well as the medical standpoint Some recent chemical and experimental research is described and some of the new books on the subject are reviewed They include Bresler's "Tabakologia medicinalis" (1911) and von Frankl-Hochwart's "Nervous Affections of Tobacco Smokers" (1912)

Ugeskrift for Læger, Copenhagen

November 11, LXXVII, No 45, pp 1737 1784

41 *Pronounced Lesions in Untreated Syphilis with Negative Wassermann Reaction A L Følnss

41 **Manifest Syphilis, Untreated, with Negative Wassermann Reaction**—Følnss has encountered 243 cases of syphilis in which there had been no attempt at treatment In 172 the lesions were those of the secondary stage of the disease and in 20 of the tertiary stage Of these two groups with manifest syphilitic lesions, there was no reaction to the Wassermann test in 10 of the 172 secondary cases nor in 4 of the 20 extensive tertiary cases nor in 11 of the 51 cases with tertiary lesions restricted to a single small area The negative response may veer to positive or vice versa within a few days, so that repetition of the test in dubious cases is advisable after the reactivation liable when treatment is instituted Følnss remarks that a positive reaction is extremely important with latent syphilis and also in dubious cases, although, he reiterates, we must not forget that it is never an "organ diagnosis" A repeatedly negative reaction, he adds, is not particularly important for the diagnosis, especially when the patient has been taking recent treatment His experience shows further that even with untreated syphilis a negative reaction is not uncommon, nearly 10 per cent in his cases (25 in 243) These negative cases are described in detail and compared with those published by others

JOURNALS INDEXED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT JULY-DECEMBER, 1915

The following journals have been indexed in the Current Literature Department of The Journal during the past six months Any of the foreign journals, except those starred, will be lent by The Journal to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days Only one journal may be borrowed at a time Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed This covers the average expense of mailing a journal Domestic journals can be obtained by sending the approximate amount direct to the respective publishers Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

Albany Medical Annals. M $2 170 Washington Ave., Albany, N Y
American Journal of Anatomy Bi m $5 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children M $3 American Medical Association, 535 N Dearborn St., Chicago
American Journal of Insanity Q $5 Johns Hopkins Press, Baltimore.
American Journal of the Medical Sciences. M $5 Lea & Febiger, 706 Sansom St. Philadelphia.
American Journal of Obstetrics and Diseases of Women and Children. M $5 William Wood & Co 51 Fifth Ave, New York.
American Journal of Orthopedic Surgery Q $3 P Blakiston's Son & Co. 1012 Walnut St, Philadelphia
American Journal of Physiology M $5 Johns Hopkins Medical School Baltimore Md
American Journal of Public Health M $3 755 Boylston St., Boston
American Journal of Roentgenology, M $5 67 E 59th St New York.
American Journal of Tropical Diseases and Preventive Medicine. M $2 P O Drawer 1110, New Orleans La
Annales de gynécologie et d obstétrique M 22 francs Paris
Annales de médecine M 23 francs. Paris.
Annals of Ophthalmology Q $4 Mermod Jaccard Bldg St. Louis.
Annals of Otology Rhinology and Laryngology Q $4 Mermod Jaccard Bldg, St. Louis.
Annals of Surgery M $5 J B Lippincott Co, E. Washington Square Philadelphia.
Annals of Tropical Medicine and Parasitology Q $5 Liverpool.
Archiv fur Gynakologie Irregular Price varies. Berlin
*Archiv fur Kinderheilkunde Irregular 15 marks. Stuttgart.
Archiv fur klinische Chirurgie. Irregular Price varies. Berlin.
Archiv fur Verdauungs-Krankheiten Bi m 24 marks Berlin
Archives of Diagnosis. Q Rebman Co, 141 W 36th St New York.
Archives of Internal Medicine. M $4 American Medical Association 535 N Dearborn St., Chicago
*Archives de médecine des enfants. M 18 francs Paris.
*Archives des maladies de l appareil digestif et de la nutrition. M 14 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang M 17 francs. Paris.
Archives mensuelles d obstetrique et de gynécologie M 25 francs. Paris.
Archives of Ophthalmology Bi m. $5 G P Putnam s Sons 2 W 45th St New York.
Archives of Pediatrics. M $3 E. B Treat & Co, 241 W 23d St., New York.
Archives of Radiology and Electrotherapy M $4 50 London
Arizona Medical Journal M $2 Phoenix, Ariz.
Beiträge zur klinischen Chirurgie. M. Price varies. Tubingen
Berliner klinische Wochenschrift. W 24 marks. Berlin.
Boston Medical and Surgical Journal W $5 126 Massachusetts Ave., Boston.
Brain A Journal of Neurology Irregular $4 London
Brazil Medico W 20 milreis. Rio de Janeiro
Bristol Medico-Chirurgical Journal. Q $3
British Journal of Children's Diseases. M $5 London
British Journal of Surgery Q $6 50 William Wood & Company, 51 Fifth Ave. New York.
British Journal of Tuberculosis. Q $1 25 G E Stechert & Co 151 W 25th St. New York.
British Medical Journal W $8.50 London
Bulletin de l Académie de médecine. W 20 francs. Paris.
Bulletin of the Johns Hopkins Hospital M $2 Baltimore.
Bulletin of the Lying in Hospital of the City of New York. Irregular $1 23 E. 93d St New York.
Bulletin of the Medical and Chirurgical Faculty of Maryland M. $0.25 1211 Cathedral St., Baltimore.
California State Journal of Medicine. M $1 Butler Bldg. San Francisco
Canadian Medical Association Journal. M $5 145 Wellington St. W, Toronto
Centralblatt fur die Grenzgebiete der Medizin und Chirurgie. Irregular 22 marks. Jena
China Medical Journal Bi m $4 Shanghai
Cleveland Medical Journal M $2 2318 Prospect Ave., Cleveland
Colorado Medicine. M $2 Majestic Bldg, Denver
Correspondenz Blatt fur schweizer Aerzte W 22 francs. Basel
Delaware State Medical Journal M $1 Wilmington
Deutsche medizinische Wochenschrift. W 32 marks. Berlin
*Deutsche Zeitschrift fur Chirurgie M Price varies. Leipsic.
*Deutsches Archiv fur klinische Medizin Irregular Price varies. Leipsic.
Dublin Journal of Medical Science. M $5
Edinburgh Medical Journal M $6
Gazzetta degli ospedali e delle cliniche. Semi w 25 francs. Milan
Glasgow Medical Journal M $5
Grece medicale. Semi m 12 francs. Athens.
Hospitalstidende. W 27 5 kronen Copenhagen
Hygiea M $5 Stockholm
Illinois Medical Journal M $2 3338 Ogden Ave. Chicago
Indian Journal of Medical Research Q $2 50 Calcutta
Indian Medical Gazette. M $5 Calcutta
Jahrbuch fur Kinderheilkunde. M 36 marks. Berlin
Journal d urologie medicale et chirurgicale. M 40 francs Paris.
Journal of Abnormal Psychology Bi m $4 R G Badger 194 Boylston St., Boston
Journal of the American Medical Association W $5 535 N Dearborn St. Chicago
Journal of the Arkansas Medical Society M $1 810 State Bank Bldg Little Rock Ark.
Journal of Biological Chemistry M $3 2419 Greenmount Ave. Baltimore
Journal of Cutaneous Diseases. M $5 Rebman Company 141 W 36th St New York
Journal of Experimental Medicine. M $5 Rockefeller Institute for Medical Research, 66th St and Avenue A New York.
Journal of the Florida Medical Association. M $1 00 334 St James Bldg, Jacksonville Fla.
Journal of the Indiana State Medical Association. M $1 219 W Wayne St., Fort Wayne Ind
Journal of Infectious Diseases. Bi m $5 629 S Wood St., Chicago
Journal of Iowa State Medical Society M $2 Des Moines, Ia.
Journal of Kansas Medical Society M $2 303 Commerce Bldg, Topeka Kan
Journal of Laboratory and Clinical Medicine. M $3 C V Mosby Company St Louis
Journal of Laryngology, Rhinology and Otology M $5 London
Journal of Maine Medical Association. M $2 Portland Maine.
Journal of Medical Association of Georgia. M $1 Harison Bldg, Augusta Ga.
Journal of Medical Research. Bi m $4 240 Longwood Ave., Boston
Journal of Medical Society of New Jersey M $2 12 Cone St, Orange, N J
Journal of Michigan State Medical Society M $3 50 91 Monroe Ave. Grand Rapids Mich
Journal of Missouri State Medical Association M $2 3525 Pine St, St. Louis.
Journal of Nervous and Mental Diseases. M $5 64 W 56th St., New York.
Journal of Obstetrics and Gynecology of the British Empire. M $6 25 London
Journal of Oklahoma State Medical Association M $2 Muskogee
Journal of Outdoor Life. M $1 289 Fourth Ave. New York.
Journal of Parasitology Q $2 Urbana, Ill.
Journal of Pathology and Bacteriology Q $5 50 Cambridge, Eng
Journal of Pharmacology and Experimental Therapeutics. Bi m. $5 2419 Greenmount Ave Baltimore
Journal of the Royal Naval Medical Service. Q $1 London.
Journal of Sociologic Medicine. Bi m $3 52 N Fourth St., Easton, Pa.

W—Weekly M.—Monthly Semi m.—Semi monthly Bi m—Bi monthly, Q—Quarterly *Cannot be loaned

Journal of South Carolina Medical Association M $2 Anderson, S. C.
Journal of Tennessee State Medical Association M $2 306 First National Bank Bldg., Nashville, Tenn.
Journal of Tropical Medicine and Hygiene Semi-m. $5 London
Journal Lancet Semi-m. $2 839 Lumber Exchange, Minneapolis
Kentucky Medical Journal M $2 State and Twelfth Sts., Bowling Green, Ky.
Lancet W $8 London
Lancet Clinic. W $3 University Bldg., 648 Main St., Cincinnati
Laryngoscope. M. $5 3858 Westminster Place, St. Louis.
Lyon chirurgical M 25 francs
Lyon medical W 20 francs
Medical Record W $5 W. Wood & Co., 51 Fifth Ave., New York
Medizinische Klinik W 32 marks Berlin
Military Surgeon M $3 50 Seventh and B Streets, S. W., Washington, D. C.,
Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie Irregular 25 marks Jena
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität zu Tokyo Irreg. Price varies. Tokio
Modern Hospital M $3 Metropolitan Bldg., St. Louis
Monatsschrift für Geburtshülfe und Gynäkologie M 42 marks Berlin
Monatsschrift für Kinderheilkunde M 20 marks. Leipsic
Münchener medizinische Wochenschrift. W 32 marks. Munich
Nederlandsch Tijdschrift voor Geneeskunde. W 10 50 florins Amsterdam
New Mexico Medical Journal M $2 P. O. 23, Las Cruces, N. M.
New Orleans Medical and Surgical Journal M $2 1551 Canal St., New Orleans
New York Medical Journal W $5 A. R. Elliott Publishing Co., 66 W. Broadway, New York
New York State Journal of Medicine M $1 17 W. 43d St., New York
*Nordiskt Medicinskt Arkiv Irregular 30 marks Stockholm
Norsk Magazin for Lægevidenskaben M $5 Christiania
Northwest Medicine M $2 Cobb Bldg., Seattle, Wash.
Ohio State Medical Journal M $2 25 Ruggery Bldg., Columbus, Ohio
Old Dominion Journal of Medicine and Surgery M $2 116 E. Franklin St., Richmond, Va.
Ophthalmic Record M $4 7 W. Madison St., Chicago
Ophthalmology Q $5 711 Cobb Bldg., Seattle, Wash.
Paris medical Tri-m. 16 francs
Pediatria M 12 50 lire. Naples.
Pennsylvania Medical Journal M $2 Athens, Pa.
Philippine Journal of Science Irregular $7 Manila, P. I.
Policlinico W 32 lire Rome
Practitioner M $6 50 London
Presse médicale Semi-w. 15 francs Paris
Providence Medical Journal Bi-m. $1 Francis and Hayes Sts., Providence, R. I.
Public Health Journal. M $2 York Publishing Co., Lumsden Bldg., Toronto
Quarterly Journal of Medicine $6 50 London.
Revue medicale de la Suisse romande. M 14 francs. Geneva
Riforma medica W 35 50 lire Naples
Russkiy Vrach W 13 rubles Petrograd.
Sei I Kwai M $2 Tokio
Semana medica W $5 Buenos Aires
Southern Medical Journal. M $2 807 Empire Bldg., Birmingham, Ala.
Southwest Journal of Medicine and Surgery M $1 El Reno, Okla.
Surgery, Gynecology and Obstetrics with International Abstract of Surgery M $10 Surgical Publishing Co., 30 N. Michigan Ave., Chicago
Svenska Lakaresällskapets Forhandlingar Irregular 7 50 kronen Stockholm
Texas State Journal of Medicine M $1 50 Western National Bank Bldg., Fort Worth, Tex.
Therapeutische Monatshefte M 12 marks. Berlin.
Therapie der Gegenwart. M 14 marks Berlin
Tumori Bi-m. 25 lire Rome.
Ugeskrift for Læger W 20 kr. Copenhagen
United States Naval Medical Bulletin Q $1 Washington, D. C.
Upsala Lakareförenings Förhandlingar Irregular, 10 kr.
Washington Medical Annals Bi-m. $1 2114 18th St., N. W., Washington, D. C.
West Virginia Medical Journal M $1 Wheeling, W. Va.
Wiener klinische Wochenschrift W 24 marks. Vienna
Wisconsin Medical Journal M $2 Goldsmith Bldg., Milwaukee
Zeitschrift für Geburtshülfe und Gynäkologie. Irregular Price varies. Stuttgart
*Zeitschrift für Kinderheilkunde. Irregular 18 marks Berlin.
*Zeitschrift für klinische Medizin Irregular 16 marks Berlin.
*Zeitschrift für Urologie. M 30 marks Berlin
Zentralblatt für Chirurgie W 30 marks Leipsic
Zentralblatt für Gynakologie. W 30 marks Leipsic.
Zentralblatt für innere Medizin. W 30 marks. Leipsic.

W.—Weekly, M.—Monthly, Semi-m.—Semi-monthly, Bi-m.—Bi-monthly, Q.—Quarterly *Cannot be loaned.

EXPLANATION OF THE USE OF THE INDEX

This is an index not only to the reading matter in THE JOURNAL, but also to original articles in the principal medical periodicals of this and other countries The reading matter appearing in THE JOURNAL is distinguished by the use of black-faced numerals

The letters used to explain in which department the matter indexed appears are as follows "E," Editorial, "C," Correspondence, "T," Therapeutics, "Ml," Medicolegal, "P," Propaganda for Reform, "ME," Medical Economics, "ab," abstract, the star (*) indicates an "Original Article" in THE JOURNAL

This is a subject index and one should, therefore, look for the chief word, with the following exceptions Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B" "D" and S" Matter pertaining to the Association is indexed under American Medical Association"

All matter is indexed under the most important word of the heading used in THE JOURNAL, and also under the subject heading For instance, abscess of the brain will be found under 'abscess," as well as under 'brain" Such titles as "ocular manifestations, etc.," have been indexed under 'Eye" Cross references have been liberally used

The figures in parentheses refer to the paragraph, the number following to the page in THE JOURNAL

ABORTION cause and treatment,
***1262**

This reference is to an original article in THE JOURNAL, as shown both by the star and by the black-faced numerals indicating the page

ACID uric, in blood Manze Zondek test for **1748**

This reference as indicated by the black-faced figures, is also in THE JOURNAL, and on turning to page 1748 we find an answer to a question in the Department of Queries and Minor Notes

ABDOMEN, anomalies of (149) **1143**

In this reference, the (149) indicates that the article is in the Current Literature Department and the fact that the page number is in black-faced type shows that the article is abstracted and discussed in THE JOURNAL Turning to page 1143, we find (149) refers to an article by F G DuBose in the *Southern Medical Journal*, September

ACETONE bodies in urine, significa-
tion of (24) 831

The fact that in this last reference the page is given in ordinary type indicates that only the title of the article is given Turning to page 831 we find that the numeral (24) refers to a paper on that subject by B Derham which appeared in the *Lancet*, July 31

In the AUTHOR S INDEX are the names of the authors of articles which have appeared in THE JOURNAL of the American Medical Association and of articles that have been listed from week to week in the Department of Current Medical Literature as having appeared in other journals The black-faced numerals indicate that the article is in THE JOURNAL, either in full or in abstract The star (*) preceding the page number indicates an original article.

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A —Association
Acad —Academy
Am —American
Coll —College
Conf —Conference
Cong —Congress
Conv —Convention
Dist —District
Hosp —Hospital
Internat —International
M —Medical or Medicine
Nat —National
Phar —Pharmaceutical
Phys —Physicians
Ry —Railway
S —Society
Surg —Surgical, Surgeon or Surgery

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